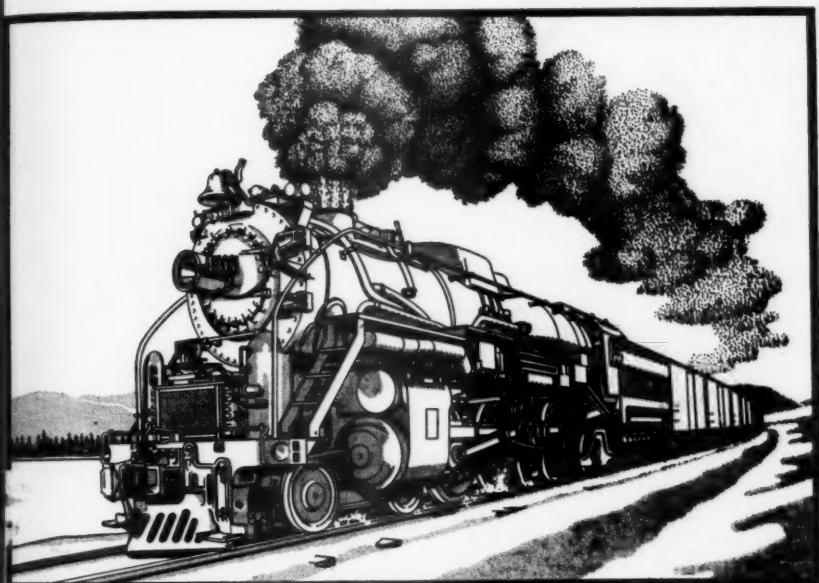


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*The Railway and Locomotive Historical Society*

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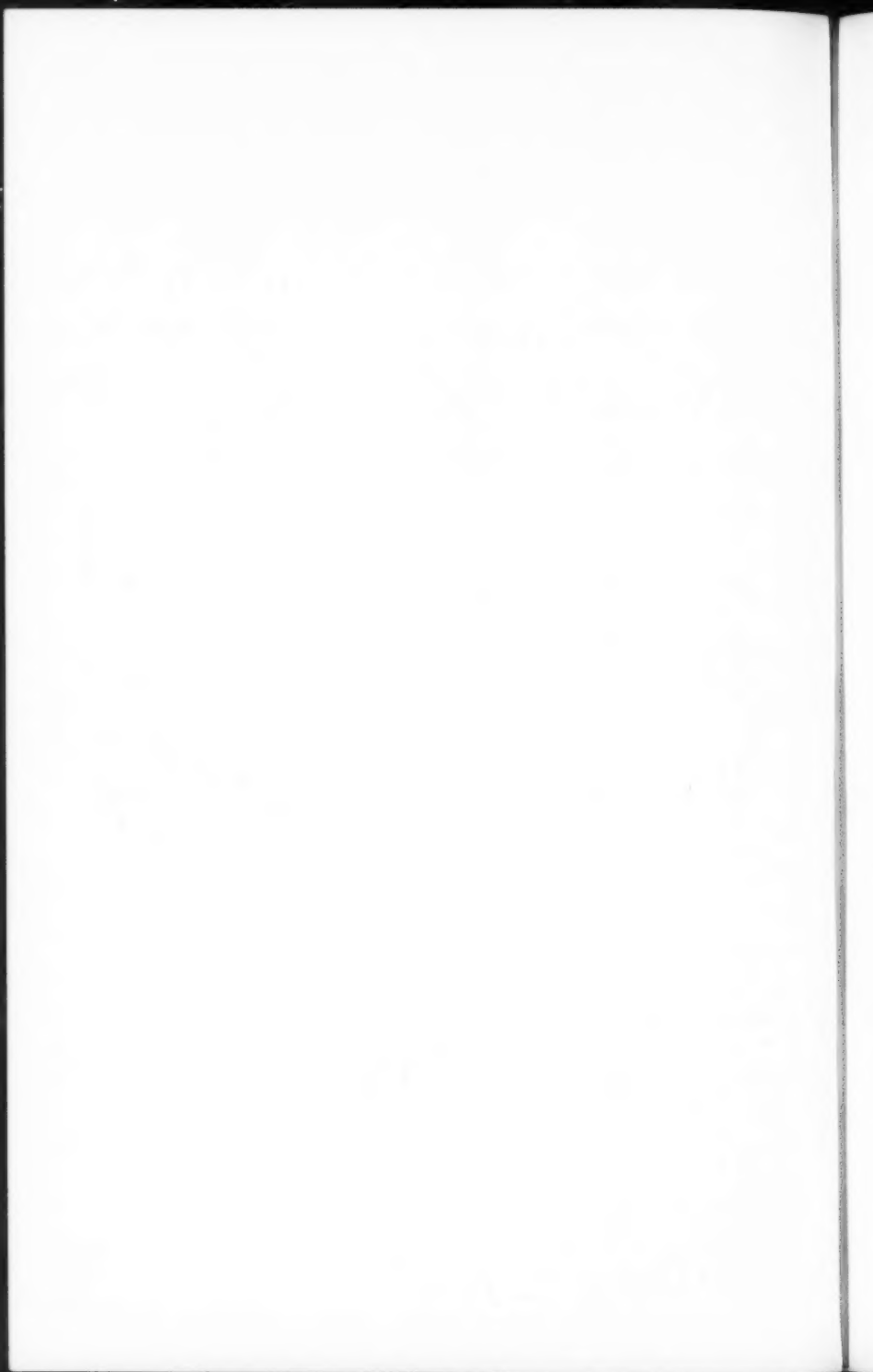
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THE RAILWAY AND LOCOMOTIVE HISTORICAL SOCIETY

MAY, 1957



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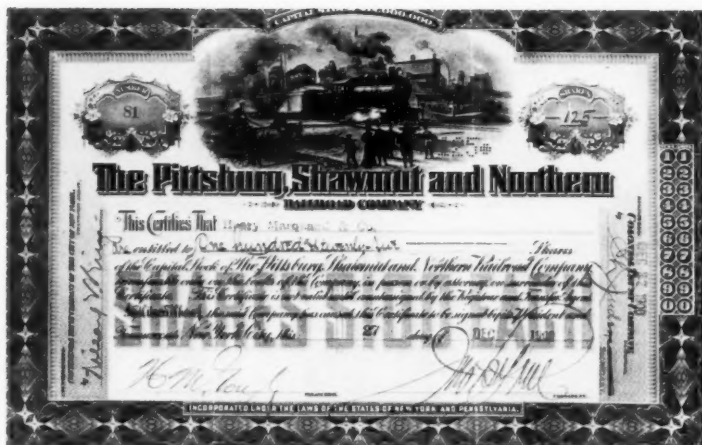
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Altho' Hawaii has no physical connection with this continent, the small railroads on that group of islands are not without their characteristics as well as their own local history. In "Pineapples, Sugar and War," Gilbert Kneiss has given us a rather strange incident the day after "Pearl Harbor" and he has related quite a bit of history of the Oahu Railway. We welcome back to our columns the interesting paper presented by Mr. Warner on the 4-4-0 types of locomotives used in service between Philadelphia and Jersey City by both the Pennsylvania and Reading Railroads. As the result of his previous papers on the P. S. & N. additional information relative to some of their early locomotives was received by the author and this material, together with some that was deleted from his last paper has been worked up in its present form.

We welcome to our columns the joint effort of Messrs. Edmiston and Greene on the Beech Creek R. R., an important coal carrier that found its way into the New York Central "family." The "Story of a Mountain Railroad" is published as a tribute to a young aviator. The author,

like many of us, was interested in the small railroad that served his community and, like many of us, he wished to record it for posterity. As a student at the University of Pittsburgh, the author was interested in newspaper work and, in addition, he was in the Civil Air Patrol and the Air Force Reserve. For a year he spent his week ends in the mountains, tracing the history of the P. W. & S. R. R. He had just finished writing the story when his own end came, at the age of 22, in a plane crash near Butler. His mother had his work published in a small book, under the same title as in our publication and she has also granted to this Society the use of same. Had Franklin J. Langsdale known of this group or had he lived longer, he could have been one of our members.

The colored frontispiece of the stock certificates of the P. S. & N. came from the same source as the little locomotive and train used in our Bulletin No. 88 and we are indeed grateful to the source.

This then, is our "consist" for our first publication and we hope that our members will enjoy it. The cover design originally appeared on our Bulletin 95.

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The Harvard College Library has the following duplicates for disposal:

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## Pineapples, Sugar and War

By GILBERT H. KNEISS

A trainload of dynamite, running without lights on a busy main line, is seldom encountered on a first-class American railroad. And yet this happened not so very long ago.

It was the night of December 7, 1941, and the road in question, the narrow-gauge Oahu Railway, running out of Honolulu. All sorts of strange things were happening that night, and had been since dawn brought Jap bombers to blitz Pearl Harbor and Wheeler Field. Army and Navy brass, suffering from the shock of unexpected attack and the magnitude of disaster with which it had to cope, issued conflicting orders right and left. The dynamite train was one result.

For months previous, workmen had been blasting the heart out of Red Hill, northwest of Honolulu. The artificial crater that they formed was to be an underground oil and gasoline storage depot where both Army and Navy fuel stores would be safe from any attack. Immense quantities of blasting powder were used in this operation and it was handled by the Army at its Aliamanu storage crater directly adjoining the Naval Station at Pearl Harbor. With enemy bombers overhead this was anything but a cosy situation. Through all the mounting death and destruction of the raid high Naval officers probably found time to pray that no Jap would drop his eggs on Aliamanu crater, as one hit might have detonated all the dynamite in storage—and what might have been left of the Pearl Harbor Naval Station had this occurred is highly problematical.

The moment the last Rising Sun wingtip disappeared out to sea a rapid-fire series of Army and Navy orders soon had the Oahu Railway management almost groggy. George Denison, the veteran general manager, had rushed to the station even while on the hills people sipped their Sunday morning coffee on their *lanais* and watched Pearl Harbor smoking in the blissful belief that the Navy was staging a wonderfully realistic practice raid. Denison knew better than that as he climbed the stairs to his office, but even he did not dream he'd be sleeping there every night for the next two years. The orders began to pour in and among the first was a demand for a train of empty box-cars to get that dynamite out of Aliamanu before the next dawn—when the Japs might be back for more.

Fortunately, the O. R. & L's (Oahu Railway & Land Co.) well-ballasted, partly double-tracked and block protected roadbed had not been struck. Its 600 employees—Hawaiian, Chinese, Portuguese, *haole* (white), and even many Japanese—wasted no time reporting for orders. The string of box-cars was dispatched to Aliamanu. Other specials had been demanded—to evacuate service families—to rush civilian repair workers to Pearl Harbor—to haul the materials that were being hastily requisitioned from every Honolulu supply house to the scene of the disaster. Orders came in from all directions—it almost seemed that every

officer above lieutenant's rank had some demand on the railroad. An amazing number of them suddenly discovered that gasoline speeders were essential to their personal functioning and the tracks would have been completely overrun by brass racing back and forth on put-puts if all who asked had got them.

At Aliamanu men worked feverishly all that bloody Sunday to get the last case of dynamite on the cars. By late afternoon the job was finished and Denison asked for shipping instructions. They were not ready, was the answer. "Start moving," he was told, "we've got to get this stuff away from Pearl Harbor. Before you've gone far we'll advise you of the destination."

The "hot potato special" got under way but no orders came. Everywhere the train paused, frantic Army or Navy officers ordered its crew to proceed at once. Armed guards with fixed bayonets made argument seem undesirable. To make the situation more precarious, complete black-out had been ordered. Even the dim blue lantern placed atop the rear car (the O. R. & L. did not use crummies) by an apprehensive shack was extinguished by a rifle shot, and a little thought about what a low bullet might have done discouraged any attempt to relight it. So, entirely dark, the train wandered back and forth all night—dynamite indeed!

When morning came Walter Dillingham, president of the railroad, insisted that the Army and Navy set up single clearing agencies for contacts with the railroad. Transportation officers were established at Pearl Harbor and Schofield Barracks and the confusion gradually subsided. Even so, no one craved close association with the trainload of dynamite, and although it was ordered to Kuhuku Plantation at the far end of the road and on the windward side of the island, and the cars spotted out in the cane fields on the plantation tracks, three months elapsed before the blasting powder, cases bleeding and more of a hazard all the time, was finally unloaded from the cars.

The dynamite train was only one of a flock of special problems that immediately confronted the O. R. & L. Not only was the damage of the raid to be repaired, the sunken twisted ships refloated and shore facilities restored, but the whole Island of Oahu must be converted into a veritable fortress and base for the war on the Japs and the railroad would carry a heavy share of the job. George Denison had moved a cot into his office that fateful Sunday. The road, which had operated with a single shift, would now, perforce, work around the clock and the g.m. was ready for 24-hour duty. He was to sleep there every night for over two years—a gruelling strain for a man well past his youth, but no surprise to anyone familiar with his long record of devotion to the road since before the first rail was laid.

He'd been less than 20 then, a Pennsylvania lad who'd come to California and worked on survey parties. Down in Redondo Beach in 1888 he handled a rod for Charles H. Kluegel, staking out town lots. It was a dull chore for Kluegel; he much preferred the railway location jobs he'd done for the Espee and Northern Pacific, and was overjoyed when the post of building the Oahu Railway in the remote Kingdom





# ISLAND OF OAHU, TERRITORY OF HAWAII

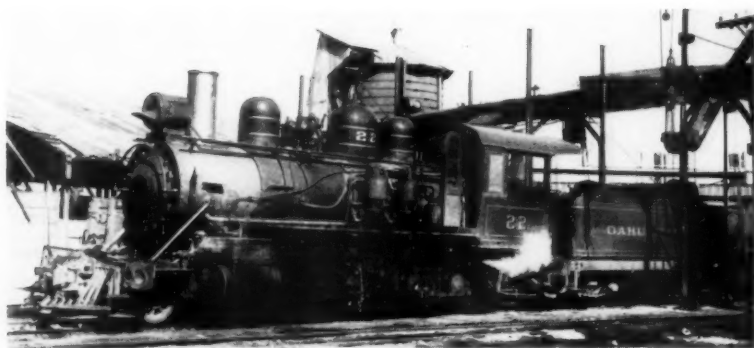
showing places mentioned in  
"Pineapples, Sugar and War"

————— Oahu Railway & Land Company lines  
- - - - - Army "hush-hush" short cut



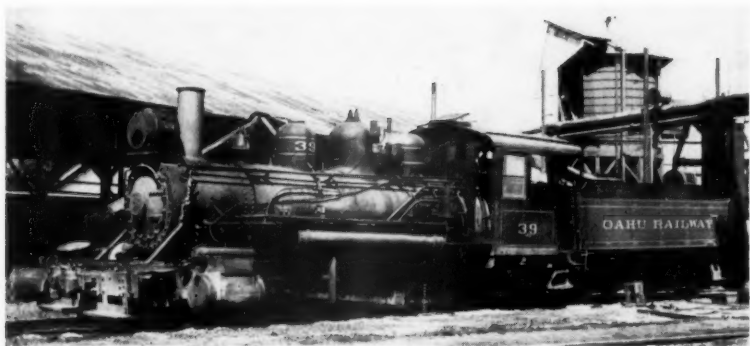
Royal Archives of Hawaii

Opening Day on the Oahu Ry. Nov. 16, 1889 at Honolulu Station. The Locomotive nearest the station is the KAALA, the other one LEAHI



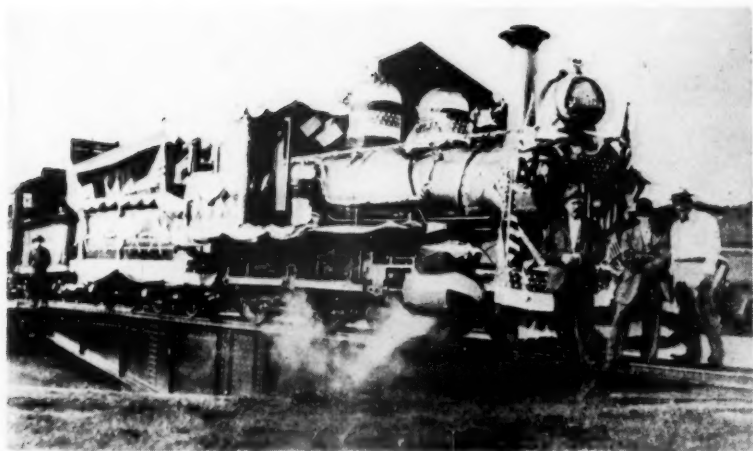
Taken by Gilbert H. Kneiss

No. 22 at Honolulu March, 1943



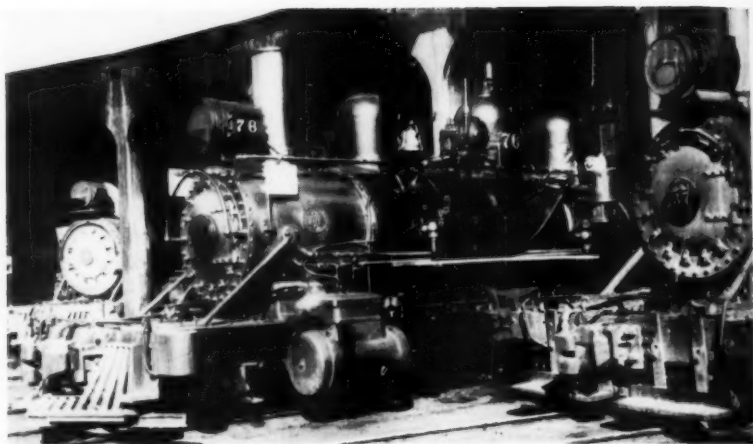
Taken by Gilbert H. Kneiss

No. 39 at Honolulu May, 1943



Photographer unknown

No. 64 decorated for the Grand Opening of the first Navy Drydock at Pearl Harbor



Taken by Gilbert H. Kneiss

Close-up of No. 76 showing "Black-out Headlight" allowed after Feb. 1943



Taken by Gilbert H. Kneiss

No. 80 at Ewa Mill April, 1943

of Hawaii was offered him. Young George was fired with enthusiasm as well; he saw himself railroading in the romantic tropics and begged Kluegel to find him a job on the new road. And not long afterward the steamer mail brought him an offer of six months' work at \$2.50 a day, a second-class ticket to Honolulu, and \$25 for expenses en route.

Three dollars of this remained in his pocket when he walked down the gangplank one Sunday morning in King Kalakau's capital city. At the foot a tax collector for Queen's Hospital relieved him of \$2.50. With his remaining capital he found a hotel room for a quarter and bought all the bananas he could carry for a nickel. Food and lodging thus being taken care of, he scrubbed off the grime of the voyage in the half-hogshead of water that was the hotel's bathtub. The next morning his old boss, Kluegel, presented him to the president and promoter of the railroad, Mr. Benjamin Franklin Dillingham.

Dillingham was a New Englander as were most of the *haoles* in Hawaii. There was no missionary in him, though; he had been a sailor, but he had married a missionary's daughter and become a landlubber in sleepy Honolulu some twenty years before. Now a very successful merchant, he was full of other plans. The vast areas of undeveloped land around the deserted lagoon called Pearl Harbor intrigued him—he thought irrigation and transportation would render them immensely valuable for sugar plantations, and the railroad was a part of this project. A most visionary project, too, said many, and one foredoomed to failure. Its promoter, they scoffed, was a candidate for the *hale pupule* (crazy house).

Ignoring the anvil chorus, Dillingham had banked time, labor, money and reputation on his convictions. Securing options on the idle land, he had run soil tests and proved up artesian water. With Samuel Wilder, who was promoting the Hilo Railroad over on the Island of Hawaii, he had journeyed to England the year before in search of capital. Unfortunately King Kalakaua had carelessly sold the annual opium license twice that year—to separate rival parties. A revolution had ensued; it was quickly settled, but Englishmen looked down their noses at Hawaiian risks. The disappointment had broken Wilder but Dillingham transferred his efforts to the United States and now construction was ready to start. The Legislature had voted him a 20 year tax-exempt franchise and on September 4, 1888, his 44th birthday, the King had made it official with his "Kalakaua, Rex". Jubilant, Dillingham had promised his friends a ride on his next anniversary.

When George Denison arrived the following March Kluegel put him in charge of grading. Ng Fong, the Chinese contractor, regarded grade stakes as just another white devil mystery and the young American almost tore his hair out trying to get the idea over. In July the bark *Deutschland* made port with German rails and another problem presented itself. Not a man on the track gang, including the foreman, had ever swung a spike maul. However, Denison had whiled away an idle half hour in Redondo watching a Santa Fe gang lay track, and on that slender experience the O. R. & L. rail went down.

The 4th of September, which Dillingham had promised to celebrate with a free ride for his friends, was approaching uncomfortably fast. In his shirtsleeves the president joined the workers and rustled ties and rails himself. Two locomotives were en route from Baldwin and were due to arrive in time. Some flat cars had already come in from the mainland, and John Hughes, the car superintendent, was busy setting them up.

The first of September arrived on schedule but the locomotives did not. Over a mile of track was down, the cars were ready, but—no motive power! There was just one way for Dillingham to make good his promise. A mule-drawn street car line to Waikiki had been built by an English outfit the year before and some one had sold King Kalakaua a little Baldwin saddle-tank job to operate on the street car track and haul sand from the beach. But its flanges would not fit the English grooved rail and it was still unassembled on the dock. This locomotive Dillingham purchased from the King and turned over to Kluegel to put in shape for the excursion.

On the morning of the 4th the new railroad terminal at Iwilei Road was a scene of feverish activity. Guests were invited for four o'clock, but there was still much to be done and Dillingham checked each detail to be sure the occasion would go smoothly. He watched John Hughes preparing to oil the journal boxes on the two canopied flats. The car superintendent was drilling a hole in a barrel of oil in order to insert a faucet; the instant the augur bit through a spurting jet of lubricant sprayed the president from head to foot. Swabbing his face without a word, he moved on to where Kluegel still tinkered with the little saddle-tank—now bearing the name "Kauila." She would be steamed up and rarin' to go at four, the engineer assured him.

She was. At that hour the train was ready on the single track by the small frame shed that served as the road's office and storeroom. The "Kauila" was popping off; she looked neat and businesslike despite the ungainly saddle-tanks and squatty drivers. Behind her were the two flats, the rear one jammed with Hawaiians and the other loaded with big-shot *haoles*—bankers, plantation owners, factors, and the like—all in immaculate white linen suits. The Royal Hawaiian Band, likewise in snowy white, blared lustily. Dillingham proudly raised his hand, Kluegel pulled his whistle cord and eased the throttle, and the first train was off. Since the engine had never turned a wheel before, he barely crawled around the curve out of Iwilei; everything went well, and he entered the tangent to Palama rice fields. Here he could speed up a bit, he thought, and show off the smoothness of the track. It was a fatal error. For he had neglected to remove the anti-rust compound in the tubes, the boiler was foaming, and as he pulled the throttle open the increased draft spewed it out the stack. The pristine white linens of the guests turned into salt-and-pepper tweeds and between the complexions of the *haoles* and Hawaiians there was precious little difference.

The guests were not amused. From end-of-track at Palama rice fields they returned, disgruntled, by carriage and the disgraced "Kauila" slunk back to Iwilei Road with an empty train. But at least Benjamin Dillingham had kept his promise.

Two months later there was quite a different scene. November 16th, the King's birthday, was a national holiday and formal opening of the railroad to Pearl Harbor was a part of the celebration. The rough shack at Iwilei Road was now replaced with a handsome station building and the American and Hawaiian flags flew side by side above it. The two Baldwin 4-4-0's had finally showed up, been christened "Leahi" and "Kaala", and were well broken in for the occasion. A fleet of pine passenger coaches from Carter Brothers' plant at Newark, California was also ready. Though there is no record that His Majesty graced this part of his birthday jubilee with the royal presence, eleven free special trains made the round-trip jaunt to Pearl Harbor and over 4000 passengers revelled in the ride.

Next day regular service started. At Pearl City Dillingham had staked out a suburban townsite and the sale of lots was brisk. The O. R. & L. would run a commutation service. Between the two terminals the country was still dry and barren except where small streams flowed from the mountains down to the sea. At these watered spots Chinese cultivated rice paddies with water buffalos and popped off rice birds with Civil War muskets. There were also a few small banana plantations. The existing total potential traffic from the area was 3000 tons of rice a year and 50,000 bunches of bananas, and for this small boats to Pearl Harbor would compete. A railroad would get mighty thin on that, and this one did. At one time the payroll was two years in arrears and there were many occasions when no one knew where the next load of coal was coming from. But soon Dillingham's plans for development began to materialize and irrigation brought vast sugar plantations to the district and dividends to the O. R. & L.

Kalakaua died, Lilioukalani lost her crown after a brief, turbulent reign, there was the Republic for a few years, and then annexation to the United States. Raising the Stars and Stripes meant a great deal more to the Oahu Railway than merely discarding its link-and-pin couplers to meet I. C. C. standards. The U. S. Navy had long eyed Pearl Harbor—now that it was under our flag it had plans for vast construction projects that would mean enormous traffic for the railroad. Furthermore, Dillingham had kept on building along the coast and in 1899, the year after annexation, reached Kuhuku, 70 miles by rail from Honolulu and about halfway around the island. The American administration spurred all business activity and more sugar plantations quickly dotted this extension.

Pineapples had been tried at Pearl City but proved a failure. James Dole, nephew of the Republic's president, had solved the trouble—it was a question of higher altitude, and at Wahiawa up in the mountains his experimental plantation flourished. To Dillingham he promised 20,000 tons of "pines" a year if the railroad would build a branch up the hill. In 1905, against another chorus from the wet blankets predicting disaster, this branch was built from Waipahu, on the main line, up the rugged Waikakalaua Gulch on a steady 3% grade and with 16° curves. The 10 mile feeder cost \$150,000, a sizable gamble for the little road that pineapples had a future.

However, it was only three months after trains started climbing up to Wahiawa that a mysterious individual named Castner stepped off a ship from the States and immediately began to traverse every road on the island in a buckboard behind a team of mules. With him he carried a sack of gold coin and the word went out he was looking for land. Finally he bought a large tract, adjacent to Wahiawa, and not until the transaction was complete did he divulge he was an agent for the U. S. Army. Schofield Barracks was the result, largest Army post in the Pacific. It was the second time that Uncle Sam had plunked down a big installation where Dillingham had just finished a railroad.

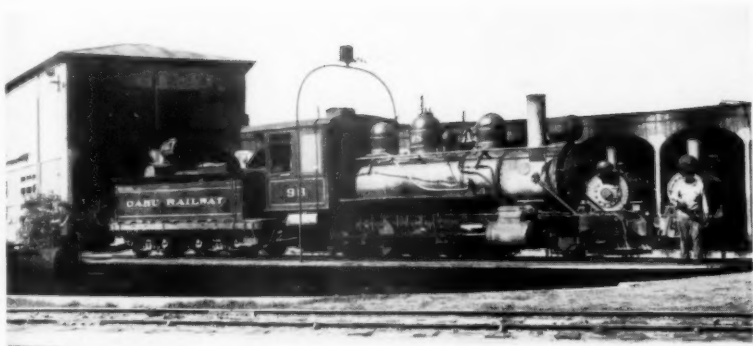
With heavy Army and Navy traffic added to its increasing sugar and pineapple business, the Oahu Railway flourished. Its 3-foot gauge was identical with the plantation tracks and its cars could be taken to any location to load pineapples or discharge fertilizer or fuel, an exceedingly handy circumstance. Some idea of the growth of traffic is shown by comparing 1891 and 1915 figures: Passengers had increased from 103,644 to 996,944; freight from 16,732 tons to 698,452 tons. The "Leahi" and "Kaala" had twenty sister engines to keep them company and 48 coaches and over 500 freight cars made up the rolling stock. Twelve passenger trains and four regular freights were scheduled daily in each direction.

World War I had comparatively little impact on Hawaii; there was considerable added traffic for the railroad but its facilities were not taxed. The death of Benjamin F. Dillingham in 1918 was a severe loss, however, to the railroad personnel. They had greatly loved the founder and builder of the road—had found him always tolerant, fair, and in every way their friend. And no one had done more to develop the prosperous island community that was their home. His son, Walter, succeeded to the president's chair; for more than ten years he'd been the active head during his father's failing health.

After 1918 highway competition began to cut in on the O. R. & L. as it did on mainland railroads. Much of the pineapple traffic began to move by truck, and to the railroad boys it seemed a shabby deal in view of the questionable advantages and the history of the Wahiawa branch. Passenger service was gradually pruned away—the twelve daily trains dropped to a single motor trip to Kuhuku. Finally even this did not pay and in the Fall of 1941 George Denison sadly seated himself in the "skunk" for the last regular passenger run. He had ridden the first "varnish" to Palama, now he would ride the last. He glared out the window at the scurrying autos and buses running parallel to the track on Dillingham Boulevard. The name seemed ironical; the boulevard had licked the railroad.

Two months later came the blitz—and passengers, thousands of 'em! War workers to repair the devastation at Pearl Harbor and build innumerable military installations—soldiers, sailors, and marines—all were poured onto the Island of Oahu as rapidly as ships could bring them. Highway transport could not possibly handle more than a fraction of them. And in 1942, the year after passenger service was abandoned "forever", the O. R. & L. hauled more than 2¼ million!





Taken by Gilbert H. Kneiss

No. 98 at Honolulu Roundhouse April, 1943



Taken by Gilbert H. Kneiss

No. 111 at Honolulu April, 1943. Formerly Pacific Coast Ry. No. 111



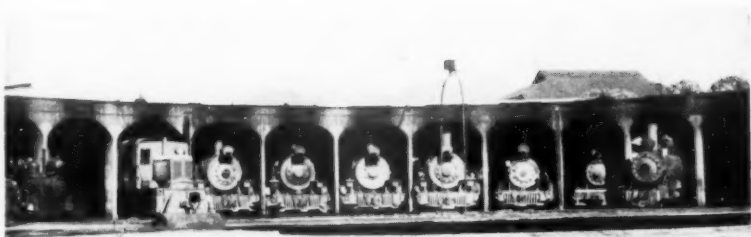
Taken by Gilbert H. Kneiss

Honolulu Station May, 1943



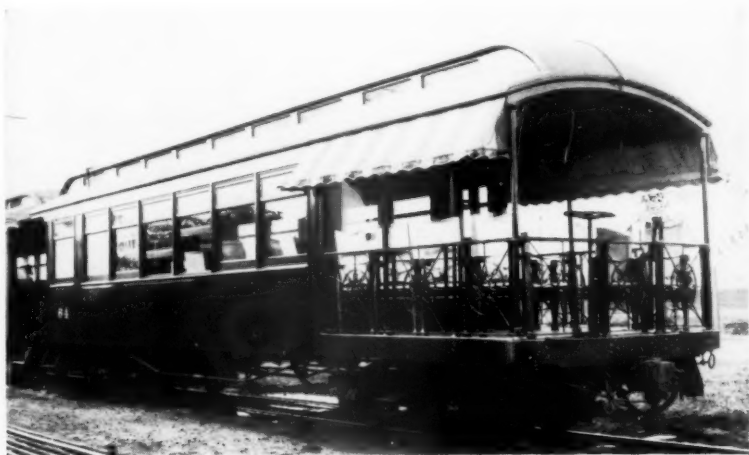
Taken by Gilbert H. Kneiss

Pearl Harbor Commute Train entering Honolulu Station May, 1943  
The cars are jammed—notice outside riders



Taken by Gilbert H. Kneiss

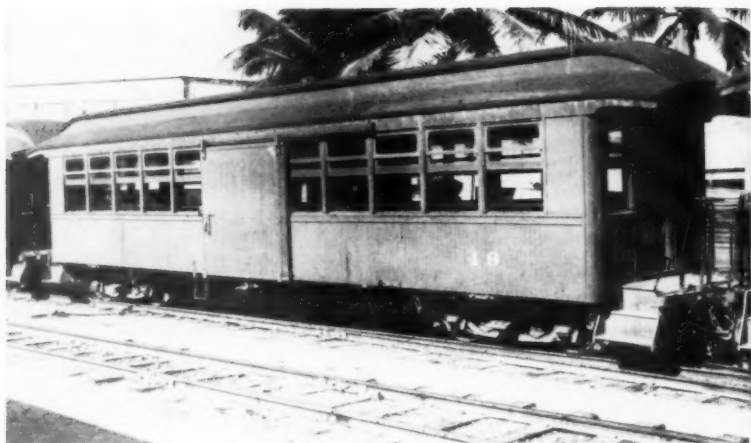
Honolulu Roundhouse February, 1944



Taken by Gilbert H. Kneiss 1943

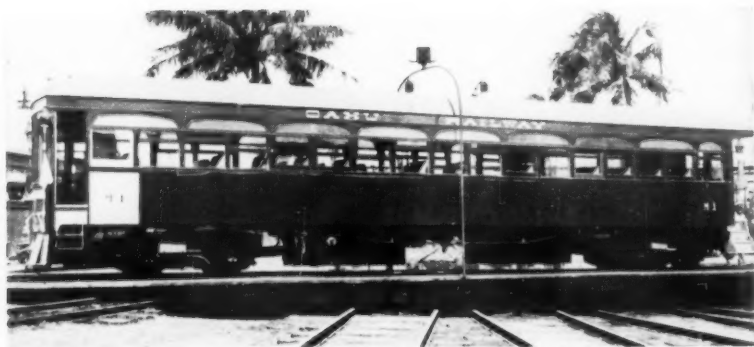
The Dillingham Private Car AMBASSADOR

Originally built for King Kalakaua by Carter Bros. of Newark, California. His Majesty was so pleased with it that he sent Thomas Carter a gold-headed cane engraved with the royal coat-of-arms



Taken by Gilbert H. Kneiss

"Side-Door Pullman" Coach which had been converted to freight service for hauling cans, reconverted to passenger service to handle war workers and military personnel



Taken by Gilbert H. Kneiss

Motor Car No. M-1 at Honolulu March, 1943



U. S. Navy Photo

No. 31 and Inbound Freight near Waipahu, 1944



Taken by Kent Cochrane

No. 70 on daily Kahuku Freight south of Kaena Point, 1945

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During the war years I often stood in the Honolulu yards when the late afternoon Pearl Harbor locals were due. Within a ten minute period three 20-car trains, behind shiny little consolidations of the '90s, would steam in, jammed inside and on the open platforms with sweating workers from the Navy Yard; there'd even be a few standing on the truss rods under the coaches and hanging on to the open window frames. The despatch with which these trains were handled was astounding. Long before the cars were stopped, machinists, welders, grease monkeys—all eager to beat the others through the station to the Honolulu trolley-busses—poured out the coach doors and through the sashless windows to race up the platform. Despite the accelerated and informal exodus, the cars would be moving backward before all were off; a switcher had followed right behind the local, hooked on the instant the road engine was uncoupled, and was snaking the long string of coaches out of the depot. Backing up, the road engine followed a few feet behind, and the track was clear for the next train, all in four minutes or less.

To handle these hordes old coaches that had been stripped of seats and equipped with box-car doors for carrying empty tins from can factory to canneries were returned to passenger service—side doors and all—with wooden benches instead of their former wicker seats. The fact that lights had been removed made no difference—they couldn't be used anyway in the black-out.

In fact, the whole railroad operated for three months after the blitz without a sign of a light. The Military Government construed the black-out literally. One night four trains were tied up at Waipahu because a sentry even forced their crews to extinguish the fires in the locomotives. When the provost marshal finally sent a man to correct the overzealous guard the train crews were so weary after 36 hours on duty that the despatcher's phone couldn't rouse them. After three months in total darkness, black-out headlights were allowed. These gave no light but at least could be seen by others.

With the tremendous wartime traffic additional rolling stock was vital. Twenty-one locomotives were in service in 1941, including four 120-ton Alco Mikados built for the road in 1925 and 26. These were the heaviest motive power and the backbone of freight operations. Most of the other engines were little coffee-pots dating as far back as the '90s. All in all, the road was powered to handle about a million tons a year—in 1942 it carried more than twice that figure. A second-hand 2-6-0 was purchased in the Fall of that year from the defunct Pacific Coast Railway and a few months later the War Production Board approved two new 47-ton diesel-electrics. The agency also authorized a hundred box-cars to be built on the mainland for O. R. & L. use under letterboards of the Army and Navy.

Other shortages than rolling stock plagued George Denison and his capable superintendent, Jack Walker. Once they were down to three kegs of spikes. And right after the blitz the Army commandeered their entire stock of rails and bridge timbers. A cut-off between Wahiawa and the windward side of the island was vital to defense, the brass decided—

it had some 90-ton railway guns for coast defense and feared that enemy attack might sever the main line and make it impossible to spot them along the shoreline in case the Japs tried to make a landing. The cut-off would be a sort of back door. And so, an extremely hush-hush track was laid down the other side of the mountains from Wahiawa to Haleiwa. The O. R. & L. only had two miles of steel in stock, and the cut-off was pieced out with light plantation rail. Fortunately, it was never needed—the chances of the heavy guns ever negotiating it successfully were slim, to say the least.

As the war moved away from Hawaii tension eased. Although traffic remained at peak capacity, the blackout and curfew were gradually lifted. Air-raid alerts, which meant hurried dispersal of all locomotives so a chance hit couldn't cripple all the motive power, sounded no more. The passenger load even increased. In 1945 the Navy installed a new fleet landing at the mouth of Halawa stream and dozens of trains a day, handled on an expedited basis similar to the Pearl Harbor locals, were required to haul liberty parties on their way to the beach at Waikiki or the honky-tonks of Hotel Street.

When the war was over, some public acknowledgment of the all-out service rendered by the Oahu Railway and its personnel under the most trying conditions could well have been made. Probably no other corporation was so much a part of the front line effort. But the men of the railroad were not content just to do their job—arduous and vital as it was. When convoy shipping landed tremendously increased wartime tonnages in jolts that swamped the port facilities of Honolulu, and seriously delayed our few precious ships, the Military Governor, General Emmons, called on Walter Dillingham to iron it all out somehow. It seemed impossible, but in a few short months Dillingham had Honolulu first among all the world's ports in ship turn-around. Then, as Director of Food Production, he organized a program that made the Territory almost self-supporting, much of the shipping space normally used for food imports being requisitioned to carry war supplies to the fighting fronts. Throughout the whole Oahu Railway organization, most of the others of every rank and race took time for various Civilian Defense duties in addition to the grueling hours on the railroad with traffic tripled, crews depleted, ammunition and aviation gasoline being rushed around under total black-out and the like. That there were no major wrecks nor other disasters seems almost a miracle and would not have been possible without the utmost devotion.

A few months after the end of the Japanese War, Walter Dillingham wrote me "We are having some hard sledding right now as a result of the radical changes that have come about because of the war, the increased cost of everything, the organizing of labor, and the reduced volume in war tonnage. These problems are a direct challenge. Once more I find myself back forty years, facing a struggle which is in striking contrast to some of the years which have intervened."

To meet this challenge plans were made to purchase more diesels and gradually retire the little coffee pots that had chugged up and down



the Island so long and so valiantly. Planned too were various special purpose freight cars. One type was designed for bulk pineapple movements from field to factory; much faster and more economical than in crates but not practical in ordinary cars because of bruising. It was hoped that most of Oahu's pineapple crop could thus be permanently won back to rail instead of highway. Special cars were also designed for hauling bulk and liquid sugar.

It was not long, however, before it became evident that rubber tires were going to win. Railway operating revenues dropped from \$4½ million in 1945 to \$2½ million in 1946. Passenger miles skidded from almost 20 million to 7½ million during the same period. A large proportion of the military activities were moved to bases west, by-passing Hawaii entirely. And civilian shippers representing more than half the traffic left gave notice they would not patronize the railroad after the end of 1947, as they were shifting their traffic to trucks.

As a result the Interstate Commerce Commission authorized the Oahu Railway & Land Company to abandon its lines from Moanalua to Kahuku (68.4 miles) its Wahiawa Branch from Waipahu to Wahiawa (10.3 miles) and its Schofield Barracks Branch (2.5 miles) as of December 31, 1947. "With a loss of more than 50% of the traffic moving in a normal year continuous operation is unwarranted" the I. C. C. decision stated, "there is no other traffic available or in prospect to substitute for that which will be lost."

Remaining in operation were a few miles of the main line at Honolulu, the yard and switching facilities, and the tracks to docks, piers and industries. Service was of course limited to freight. In addition the Navy Department leased certain portions of the line required for transportation between its various installations.

This vestigial operation has continued since the beginning of 1948. However, it now (1956) appears probable that what is left of the Oahu Railway may amazingly be standard-gauged after all these years and connected with the Mainland by sea-going car ferry. Walter Dillingham has proposed and is actively promoting the project. The Maritime Administration, it is reported, has indicated approval for the construction of two appropriate ships. Surprisingly enough, a box car aboard such a ferry would make better overall time than on the average freight train.

Steamship companies serving the Hawaiian Islands are understandably less than enthusiastic about the plan. Whether standard gauge freight cars loaded on the Mainland will soon be spotted on Oahu industry tracks remains to be seen. The Dillinghams, however, have a way of making their dreams materialize.

For assistance in writing this sketch of the O. R. & L. I am indebted to Mr. Walter Dillingham, Mr. John Walker and the late Mr. George F. Denison. Reference material used included files of the Honolulu *Star-Bulletin* and its predecessors, the Honolulu *Advertiser*, and *Paradise of the Pacific*; also "Recollections of B. F. Dillingham", a manuscript by John A. Hughes.

# The Pittsburgh, Shawmut and Northern, and all Associated and Predecessor Roads

By CHARLES F. H. ALLEN

Since the two preceding articles appeared in Bulletins 92 and 93, some of our members have made suggestions or contributions that it seems worthwhile to record. In addition an account of the two principal collisions, which were locally of great importance, is given. The stock certificates, reproduced as a frontispiece, were loaned by Mr. H. E. William of the New Shawmut Mining Co., St. Marys, Pa.

The "Angelica Advocate" for Mar. 14, 1890 gives a list of Lackawanna and Southwestern trains, engines, and trainmen. This is of great importance, because it is proof of the existence of certain engines at that date. Some of the employees mentioned terminated their services on the Shawmut many years later.

"Trains Nos. 18 and 19; engine No. 7; narrow gauge, runs between Angelica and Olean; J. McLaughlin, conductor; Sam. Seager, engineer; W. Johnson, fireman. Mixed train; McLaughlin working hard for the company.

"Trains Nos. 5 and 6; engine No. 21; standard gauge, Angelica to Wayland and return; T. O'Connors, conductor; Joe Way, John Ward, brakemen; Geo. Cooper, engineer; James Curtain, fireman; mixed train.

"Trains Nos. 1 and 2; engine No. 4; narrow gauge; F. N. Decker, conductor; Tom Laffin, brakeman; Frank Post, engineer; H. D. Badger, fireman; mail and express; Geo. Napier, messenger.

"Trains Nos. 7 and 10; Cannonball, main line; engine No. 32; Wayland, Hornellsville and Olean, via Belfast and W.N.Y.&P.; W. H. Mosier, conductor; Cunningham and Dority, brakemen; Wm. Owens, engineer; E. Bennett, fireman. On alternate days, engine No. 34; G. C. Hendershot, conductor; Hathaway and Bess, brakemen; Ketchum, engineer; Slatt, fireman. Mail and exp."

## *Notes on Locomotives.*

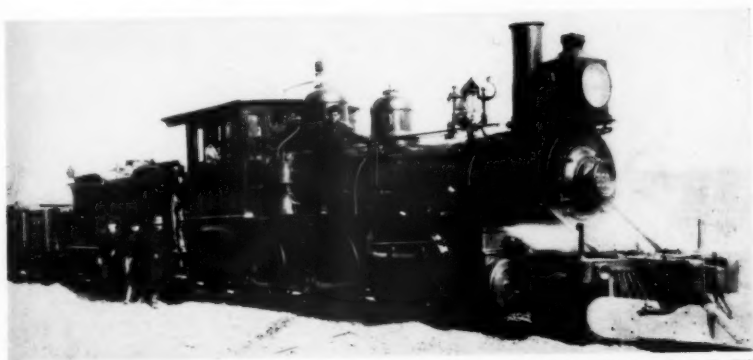
In an attempt to clear up some discrepancies or uncertainties in the accounts published in previous bulletins, I again contacted Charlie Lyons. He was the hostler at Angelica for the Lackawanna & Pittsburgh; with anyone who wants information his remarks should have the most weight. First about the seven Allegany Central narrow gauge engines. Mr. Lyons said they were ALL second-hand except No. 1, which was the "A. W. Miner," ex-Friendship No. 1. Mr. Miner, the local banker, bought the engine NEW and presented it to the railroad. The No. 2 was a dinkey, having two pilot wheels and four red drivers, and little used—hence the absence of records. He again said that No. 4 was a Brooks, and the best engine on the road; it was the only one to have air brakes installed. It could pull 12 cars up a grade, where the six-wheeled freight engines could drag only 14.

Lackawanna & Pittsburgh No. 203 became RW&O No. 12. Its boiler exploded about Apr. 28, 1891 (according to an Oswego paper of



Courtesy of David A. Howe Public Library

The first #15, in cave-in of coal mine



Courtesy of Fred C. Hill

D. L. & W. #250, like P. S. & N. #19



Courtesy of M. K. Schick

Shawmut #41



Shawmut coal train (loco. #43) on Brookville trestle, 4-27-07

Courtesy of M. K. Schick



P. S. & N. #20 at Olean; Ray Lacy in cab



P. S. & N. #52

Courtesy Fred C. Hill

Apr. 29th:) this was shortly after the NYC & HR took over; but before a new number had been assigned.

L & P Nos. 308 and 310. Mr. Lyons said these had six drivers, and were bought to operate the Globe Fast Freight Line. The roster (p. 41, Bulletin No. 92) has them returned to Rome, repaired and sold to the Central of New Brunswick Ry. Mr. Robert R. Brown questioned this, stating that he had pictures of CNB Nos. 1 and 2 (from C. W. Anderson of Fredericton, N.B.) and they were 4-4-0, and could not have been 2-6-0 unless drastically rebuilt. Messrs. Wood and Fisher concur. All agree that they passed through the Rome Works on account of superficial characteristics. Had the locomotives been returned by the Lackawanna & Pittsburgh with broken frames, the same boiler could have been re-used on new 4-4-0 frames; this would account for most of the discrepancies. It looks as though there has been a mistake somewhere; one must draw his own conclusions from the available evidence.

CNY & W No. 43. Mr. Lyons stated that most people thought that this was a new engine, because it came to the L & P freshly painted and polished, at about the same time as the two new Cooke engines, Nos. 21 and 32. However, it was definitely second-hand; he thought it might have come from Cooke, but didn't know for sure. These comments support the conclusions arrived at in the previous Bulletin.

PS & N No. 2. This was a very light engine, coming from the Mt. Jewett, Clermont and Northern, and was usually used in a work train. Engineer deShetler told Roscoe Davis that he drove it on the work train during the construction of the Shawmut extension to Smethport. It was frozen up at Hornellsville, as previously described; this incident was recollected by a Dave Rogers (told to Mr. Nugent). Mr. Lyons recalled that at the time of a big fire in Friendship, Angelica sent a fire engine to help, and the special train was hauled by No. 2.

No. 9. This was the oldest Cooke engine, not being scrapped until 1928 after 40 years of service; its most famous use was on the Cannonball, when it was RH & L No. 34. The outward appearance was changed several times during shopping, as will be noted in the various pictures.

No. 10. Mr. Hill writes that for many years this engine was used on trains Nos. 7 and 8. The engineer was Jim Curtin. When it was out of service, No. 13 was used. Curtin was told he could have the latter regularly, but preferred the former.

No. 11 was used on trains Nos. 9 and 10, with William Johnson at the throttle. The engine was destroyed and Johnson killed in the Nile wreck in 1912.

First No. 15. This old ten-wheeler, ex-L & P No. 21, had fancy domes like No. 8. Engineer John Coyle, an engine inspector at the Angelica shops, told Fred Hill that No. 14 also had this type of dome, but after it jumped the track, landing upside down, new casings were required. The latter were of the round, smooth type. No. 8, according to an old picture seen by Mr. Hill, had a diamond stack, short boiler front, and whistle on top of the dome—presumably the others, 9, 14 and 15 were the same originally.

Moguls Nos. 15-17 were bought for passenger service; Nos. 16 and 17 were used on the southern end when Mr. Hill was stationed at Angelica. No. 17 was used as yard engine at Hornell for many years; it was often off the tracks, being too stiff to take the sharp curves. This second No. 15 was purchased after No. 11 had been wrecked, and upon arrival was assigned to trains 9 and 10 which the 11 formerly handled. The reason they could use a heavier engine on these runs was because train No. 9, during season, handled several carloads of celery in addition to its regular train. Before second No. 15 came, No. 20 was used during the celery season. As a consequence of the Nile wreck, Frank S. Smith ordered the engine numbers painted on the tenders in large numerals, such as may be seen in the later pictures of many of the engines.

Nos. 18 and 19, ex-DL & W, were like DL & W No. 250, except that No. 18 had a round headlight and modern bellstand, according to Mr. Hill. No. 19 was the better looking engine, with less wagon-top to the boiler, and a better proportioned casing around the steam dome; it had a tapered stack. It was taken to the Angelica shops because of a broken cylinder saddle casting. Since the plans had been lost in a fire in the Morris & Essex shops, it was scrapped. Parts were used for No. 18 when needed. At this same time No. 18 was equipped with a short stack and the whistle was changed from the top to the side of the dome. After this shopping it was used mostly in passenger service. No. 19's bell went to the Angelica high school. The leased DL & W engine was No. 334, not 34 (typographical error in Bulletin 93).

No. 20, ex-BStM & SW No. 5, was the first engine from the southern end to be used on the northern part. It had a relatively long life, being rebuilt several times as may be noticed in the pictures.

Nos. 44, 45, class H-1, were former BStM & SW consolidations Nos. 7 and 9. No. 45 was used on the work train during the construction of the Angelica-Bolivar link in 1902-3. Nugent, Sr., who fired it then, with John Possel as engineer, recalls that the boiler leaked so badly it needed a car with two wooden tanks in addition to the tender, in order to keep it running any useful length of time. No. 45 was around the northern end more than 44. After the bridges were strengthened between Prosser and Olean for heavier engines, Nos. 44 and 45 ran opposite each other on the local Hornell-Olean freights. No. 45 was also fitted for passenger service. After being scrapped its boiler was used as a stationary boiler in the St. Mary's shops for many years.

Nos. 50-55. The explanation of the out-of-order shop numbers of Nos. 53 and 55 is as follows: the PS & N placed an order for six 2-8-0 locomotives with Baldwin. Before delivery, however, the need of the Kansas City Southern was so much greater that the first four completed (shop Nos. 22285, 22299, 22350 and 22407) were diverted to this mid-western road, becoming their Nos. 450-454. Naturally, they would not appear on the Shawmut records or roster.

Pittsburg & Shawmut Nos. 101-103 incl. P & S agent M. K. Shick of Brookville called my attention to the omission of the first three passenger engines of this road. They were all ex-NYC, built at Schenectady,



2-6-0, 19 x 26 cyl., and 57" drivers. Data from Mr. Frazier and S. R. Wood follow: No. 101; Constr. No. 3895; Sept., 1892; NYC & HR Nos. 750, 1653; No. 102; 3911; 10-92; road Nos. 766, 1669. No. 103; 4130; 12-93; to St. Lawrence & Adirondack as No. 1, then NYC & HR No. 1687.

*Nugent's Account of the Last Shawmut Construction in West Notch*

R. G. Nugent has recorded his father's recollections of the construction work in these words: "I went to work for the construction firm of Lathrop, Henwood & Shea in the spring of 1902. They had a contract with the Shawmut to build a new road, generally following the route of the old narrow gauge, from a point about one mile east of the Friendship station, to the summit of West Notch.

"My father, John 'Pat' Nugent, and I owned two teams of horses that worked for the construction firm, one team being driven by me and the other by Frank Sprague. The pay for the teams was \$3.00 for a 10-hour day, 7 AM to 6 PM, the driver getting \$1 out of the \$3. The teams spotted small dump cars at a large steam shovel, that were then filled, and hauled away by a regular steam locomotive. Several other teams were employed at hauling dump carts, building fills, etc.

"Early in the summer I went to work as a helper on one of the two steamshovels on that section, building the large fill at Nile. A short time later, because of the shortage of men, I was put to work as fireman on the work train. I fired two different engines there: one was Erie No. 121 (2-6-0?) and the other, Shawmut No. 45." (My father said that the Shawmut engine was painted with the road's name and number, but he doesn't know what the Erie engine was doing working for the Shawmut. No doubt it was leased.)

"In the morning and at night, after work, I sometimes braked on the train that hauled the Italian laborers to and from work from their labor camp just east of Friendship. They used to be a noisy bunch, and particular who their boss was. Several times there were minor labor disputes when some worker disapproved of his foreman.

"Most of the cars of ties, cement, sand, and gravel came from the Erie at Friendship, then were hauled by team to the section I was working on, above Nile. The reason for the teams instead of work trains hauling the materials was that one section was being built from Friendship to the Nile fill, and the other section was being built from Nile to the Notch. The fill was about the last thing finished, and therefore there was no rail connection between the two sections.

"Another contractor was building the lines from Bolivar to the Notch. When the two gangs met in the Notch, there was a wild celebration, the whistles blowing on all the engines and steamshovels, and the Italians going on a big spree that night. During the winter the ties and rails were laid and one day the first train passed over the new road between Friendship and Bolivar. The train was made up of about 12 or 14 cars and four engines. The track was very rough, and the train never looked as if it would finish the trip, but a few hours later it made a return trip. Jack McLaughlin was the conductor on the train, and

Will Smith the engineer. Two O'Connor brothers were brakemen, but I can't remember who the fireman was. It was almost a year before ballast was put under the ties, and for nearly two months the engines got water from a hydrant near the old sash and blind factory at Friendship. A water tank was then built near the factory and was used up until the road was abandoned.

"The Shawmut offered me a job as fireman on the freights after the construction work was over, but as about 20 men had that idea, I figured that there was no chance for me."

Nugent, Sr., says there were two dinkey engines, 0-4-OT, used in building the road; these were very small, and owned by Lathrop, Henwood & Shea. The first one, No. 12, was shipped to Friendship on the Erie, from which point it was hauled to Nile by twelve teams of horses. The second one worked on the south side of the Notch.

Mr. Hill writes that "when the road was first opened between Bolivar and Angelica, I remember one particular instance when one of the coal trains had five engines pulling it up Richburg hill. One of them was the contractor's dinkey. I don't remember the others."

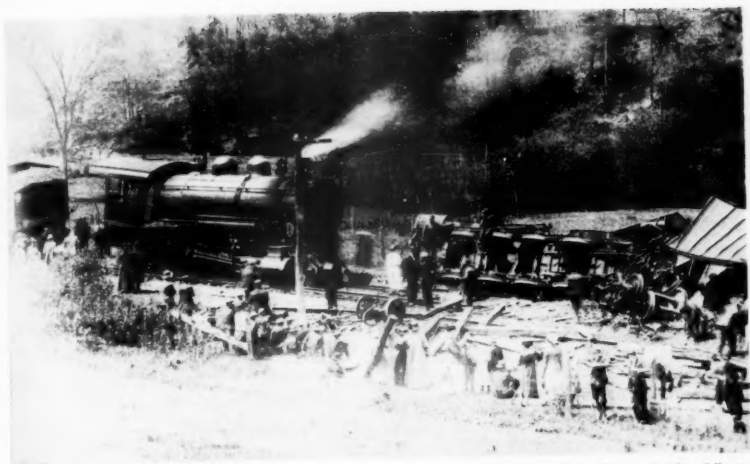
Prices of ties about 1910 were as follows: oak (white or rock), black walnut, red beech and wild cherry, 68 cents each; chestnut, 40 cents, and mixed oak, mostly red, 48.

### *Collisions.*

Records of two head-on collisions have been preserved so that a good account is available. The first of these was the Nile wreck, and occurred on Sunday, Sept. 22, 1912, between an excursion and a freight train. It took place a mile south of Nile, N. Y. in the early evening. Two passengers, a man and a woman, were killed; sixteen passengers and three of the crew were injured, one of the latter so badly he died later. Fireman Jerry Wells survived this harrowing experience; R. G. Nugent was fortunate enough to get his story as he recollects it, and it is reproduced essentially as recorded by the hearer (1950). Certain details have been added by Nathan Wells (no relation).

The principals were extra freight north, No. 68, powered by a relatively new Baldwin consolidation, and a special excursion train from Olean to Hornell, which was returning to Olean. The special consisted of engine No. 11, and old 4-4-0, with two wooden cars. Owing to a long delay, the train crew were hurrying and neglected to shift the cars at Hornell, so that on the return trip the passenger coach, instead of the combination car, was next to the engine.

The train crew consisted of these men. Passenger: conductor, Jack McLaughlin; engineer, Bill Johnson; fireman, Jerry Wells; baggage-master, Bobby Lafflin. Freight: conductor, Dave McLaughlin; engineer, George Steiner; fireman, Lloyd Walker; flagman, ..... Scholder; car brakeman, J. J. Short; head brakeman, H. A. Burns. Walker and Schloder are now residents at St. Marys. Short is a trainmaster and Burns a conductor on the Pittsburg & Shawmut, both living in Brookville. Steiner died recently. Wells is now an engineer, on the regular



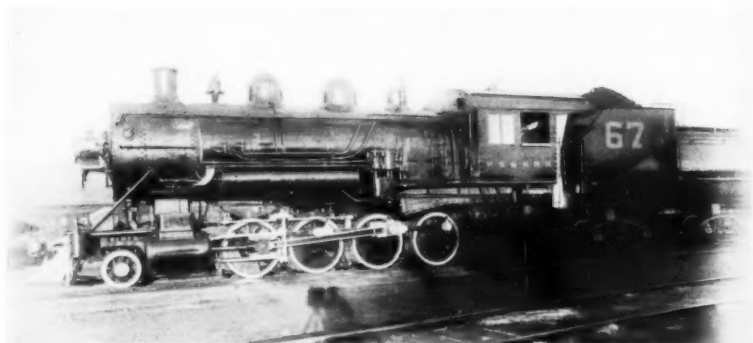
Courtesy of David A. Howe Public Library

Angelica wreck; #55 at left



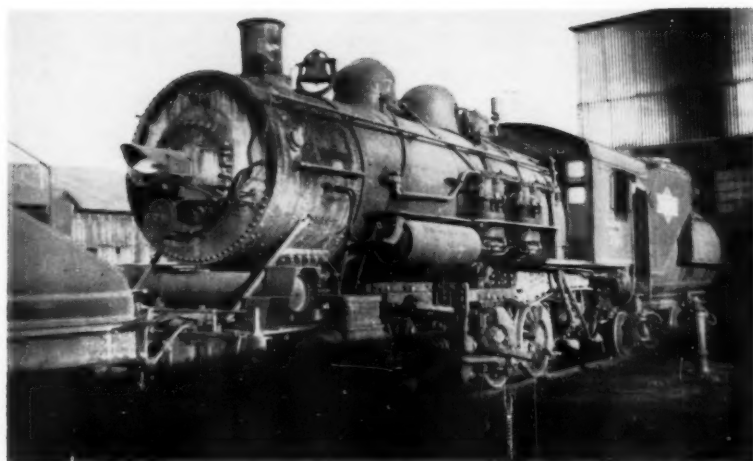
Courtesy Baldwin Locomotive Works

P. S. & N. R. R. #60



Courtesy of David A. Howe Public Library

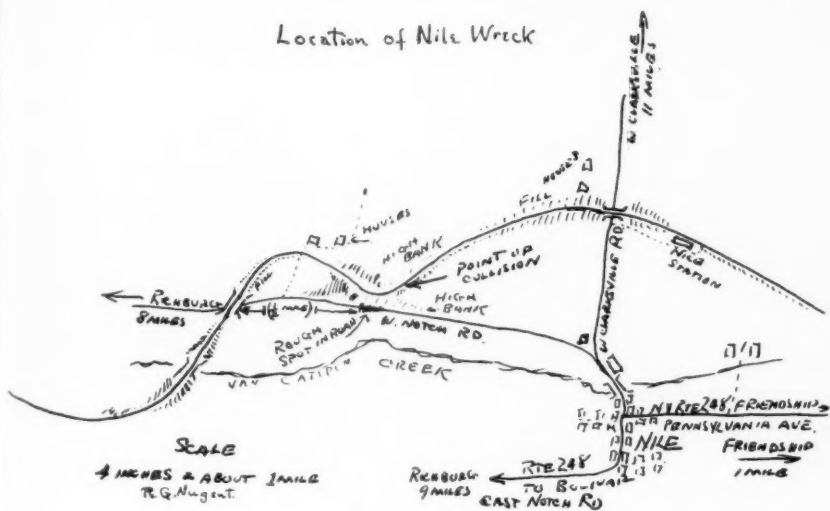
P. S. & N. #67; Baldwin, 1908, showing large numerals on tender. Sc. 1940



Courtesy R. G. Nugent

P. S. & N. #76, ex P. & S. #226

# Location of Nile Wreck



Location of Nile Wreck



Courtesy of David A. Howe Public Library

The #11 after Nile wreck



Courtesy of David A. Howe Public Library

Car #107 after the Nile wreck



Courtesy of David A. Howe Public Library

P. S. & N. #68 after the Nile wreck

P & S pusher out of Brookville. He has a daughter and two sons working on this road, one as flagman, the other as a brakeman; a third lost his life in the recent war. Wells started as a fireman in 1909, and was promoted to engineer in 1913; he lived in St. Marys until 1913 when he moved to Brookville.

The passenger train had been regularly scheduled until Sept. 1st; on this Sunday (22nd) it was run as a special. It left Olean in the morning and was flagged at Ceres because of a burned-off journal on a freight train ahead. After a delay of about 3 hours, engine No. 10 and two cars were made up on the other side of the stalled freight and the passengers were transferred. This made the excursion late into Hornell; they were so late that they did not stop there to eat, as usual, but turned the engine around and coupled it onto the rear of the excursion train. On arrival at Hornell, Jerry Wells went over to George Prindall's restaurant and bought two tripe sandwiches, one for Bill Johnson and one for himself. They received orders to run extra to Olean, leaving Hornell about 6 PM and arriving at Olean about 9 PM. When they reached Belvidere, they found engine No. 11 there; it had arrived after the broken-down freight had been cleaned up. So they changed engines, and, thus, returned with No. 11 with which they had set out in the morning. There was no place to turn the train, so the cars were in the same order as they left Olean.

They were temporarily held up by a block near Friendship, and received an order to meet Extra No. 68 on the Friendship north siding, about half a mile south of the block. Meantime a light engine, Extra No. 69, had made Friendship on No. 11's time, and was in the Friendship siding on the right side of No. 11. It was customary for north and south-bound trains to meet at West Notch or Friendship. No. 69 was returning to Angelica after helping a train over West Notch. There is no indication that there was any mention of Extra No. 69 in the orders given to No. 11. Engineer Johnson mistook No. 69 for No. 68, for the headlight had not been dimmed or hooded, but was burning brightly. At Nile, Jack McLaughlin, the conductor, came up to the engine and asked Johnson what engine he had passed at Friendship; Johnson replied "Extra No. 68." "Are you sure?" asked McLaughlin. Johnson replied, "If I weren't sure, I wouldn't be here." "All right, Billy, go ahead," said McLaughlin. They went on; at a curve, about a mile south of Nile the collision took place. Engine No. 68 was derailed, along with several cars of coal. No. 11 was tossed off the right of way, and so badly damaged it was scrapped at the end of the year. The casualties all occurred in the first car, No. 107. The passenger engine and cars were dragged to Friendship before daybreak, so the only pictures taken at the scene were No. 68 and the coal cars.

Jerry Wells said that when he regained consciousness he was in a car of coal; he didn't know where he was nor how he got there. When brakeman Short came up to him with a watch on a short piece of chain, he recognized it as Bill Johnson's. Short said there was a man lying beside or under No. 11, and that this was his watch. Then McLaughlin came along and asked Jerry to go for help as there were several people

badly hurt. Still in a daze, he set out across a cornfield towards a farmhouse to ask for the use of a phone; as he walked in the door he tripped over a rug and fell into the room. The lady there remarked that he must be badly hurt, and put him into bed, dirt and all. He was the last of the injured to be taken to the Friendship Sanitarium. Engineer Johnson kept calling for Jerry, but did not recognize him when he did come. Johnson was finally taken to the Olean hospital, where he died four days later.

Engineer Steiner jumped into his tender, and was only slightly hurt; fireman Walker crawled out of the window of the overturned engine No. 68 and through the ditch, uninjured. Jerry Wells' account ends here. Mr. Nugent reports that chunks of coal and pieces of coal were still visible at the site of the wreck in 1950.

Nathan Wells recalls that at the subsequent investigation by the Interstate Commerce Commission it was brought out that the train crew had neglected to turn the cars as well as the engine at Hornell, and they were censured for this by the investigators. If the train had been properly made up, the combination car would have been behind the engine, and the passengers would not have been trapped. Nathan Wells was connected with the Shawmut from 1908 to 1916, first as Frank Sullivan Smith's private secretary, and then in the legal department.

After Jerry Wells had recovered from this experience he resumed firing, and had another close shave. His first trip was on No. 14, one of the ten-wheelers, with Hooper as engineer. Near Hornell, the engine and tender parted company just after he had stepped off the apron. Before the Pittsburg, Shawmut and Northern and Pittsburg & Shawmut were separated in 1916, the engines and train crews worked both ends. Wells belonged on the southern end, and went with the P & S.

While searching among the old records I was fortunate enough to find these items about No. 11: (1) A number of boiler inspection certificates, including one dated Sept. 9, 1912, the last one before the Nile wreck. On this it is stated that this engine was owned by Frank Sullivan Smith and the Byrne Estate. (2) An out-of-service form, on account of extensive damage, from Sept. 22, 1912. (3) Two withdrawal notices for locomotive boilers, dated Oct. 10, 1912, and filed in both New York and Pennsylvania, stating that this one was out of service since Sept. 22. Also in the weekly report of roadmaster J.A.B. (John A. Benson) to H. S. Wilgus, Eng. Maint. of Way, dated Sept. 29, 1912, among other items are these: "Shipped 100 ties account of wreck. Loaded on wrecking car 100 ties and 5 33-ft. 85-lb. rails. These were removed recently, account of wreck."

*Angelica Wreck.* A second head-on collision occurred on May 26, 1913 very near the County House station, two miles north of Angelica. A work train, with engine No. 226, met a coal train, engine No. 55: 226 was derailed and turned over on its side in the ditch. The engineer was Geo. Cooper, and the fireman was Ray Lacy. A one-armed boomer-operator, ..... McMann, also figures; he had received the order that resulted in the collision, from the dispatcher at St. Marys.



According to Lacy (told to R. G. Nugent) the cause of the wreck was a mistake in orders. A No. 31 should have been issued to both trains for a meet at Bennetts. Instead, a No. 19 was issued; this gave the freight the right to proceed if work Extra No. 226 north was not at Bennetts for the meet. A No. 31 order would have taken away the right for the freight to proceed if No. 26 had not been there.

George Cooper was killed in the collision when 226 was derailed and turned over. Lacy jumped just before the meet, rolling up against the fence along the right of way and injuring his legs; he was out of service for a fortnight. His hat was found under 226 on the spot where he landed when he jumped. Lacy had entered employment with the Shawmut as a fireman in 1910 and promoted to the grade of engineer in 1914. He worked practically all the time on the northern end of the road.

McMann, the operator, had formerly worked on the Erie, where he had lost his arm in an accident. It so happened that Cooper was also employed by the Erie at the same time, and the two were acquainted. For some unknown reason, McMann feared that he would be blamed for the wreck and at once disappeared. Lacy saw him a few days later at Hornell. McMann asked if the railroad officials were looking for him. Lacy told him that he was not regarded as being at fault for the accident.

Locomotive No. 226 was one of the four 2-8-0s (226-229) that were almost identical with the PS & N series. These engines were owned by the Allegheny River Mining Co., an affiliate of the Pittsburg & Shawmut RR Co., which at that time was leased to the Pittsburg, Shawmut and Northern. The initials ARMCo appeared on the tender for several years. No. 226 was sold to the PS & N in 1944, becoming their No. 76; it was scrapped with the other Shawmut engines when the road was abandoned in 1948.

When he was a small boy, R. G. Nugent lived in a farmhouse near West Notch, about  $\frac{3}{4}$  of a mile towards Nile. He can recall that there was some sort of a wreck in 1926 or 1927, for he was told that he was scared by the noise of escaping steam, so ran out of the house. He also remembers a derailment almost in front of the house.

# The Beech Creek Railroad

By HOWARD F. GREENE and C. C. EDMISTON

The present economy of America was made possible by rapid and cheap transportation. Principal medium for such transportation was the railroad, operated with steam motive power. Fuel was burned to heat water which expanded into live steam and provided the power for moving passengers and commodities many miles, rapidly and at minimum cost. A most important part of this arrangement was fuel and, although wood was used at first, the predominant fuel soon became coal.

An adequate supply of coal had always been a source of worry to the management of the New York Central and Hudson River Railroad. Most of the soft coal burned by the Central's engines came from Pennsylvania and much of it was hauled by the Pennsylvania Railroad, competitor-in-chief of the Central. True, W. H. Vanderbilt and a friend acquired control of the Philadelphia and Reading as a precautionary measure, but the P & R operated in the Schuylkill anthracite coal field, and the Central used little anthracite. So, in 1882 the Vanderbilts acquired control of the Clearfield Bituminous Coal Company in Pennsylvania. This company was chartered December 27, 1882 and its directors were W. K. Vanderbilt and Cornelius Vanderbilt of New York, C. J. Langdon, William D. Kelly and J. D. F. Slee of Elmira, New York, George J. Magee of Watkins, New York, John Lang of Corning, N. Y., John G. Reading and Joseph M. Gazzam of Philadelphia, Pa., William A. Wallace and B. L. Wallace of Clearfield, Pa., and S. R. Peale of Lock Haven, Pa. The corporation acquired 22,500 acres of coal properties in Clearfield and Centre Counties, Pennsylvania, established a mining village at Peale and opened several mines. It is interesting to note that villages were named for both S. R. Peale and Joseph M. Gazzam of the Board of Directors.

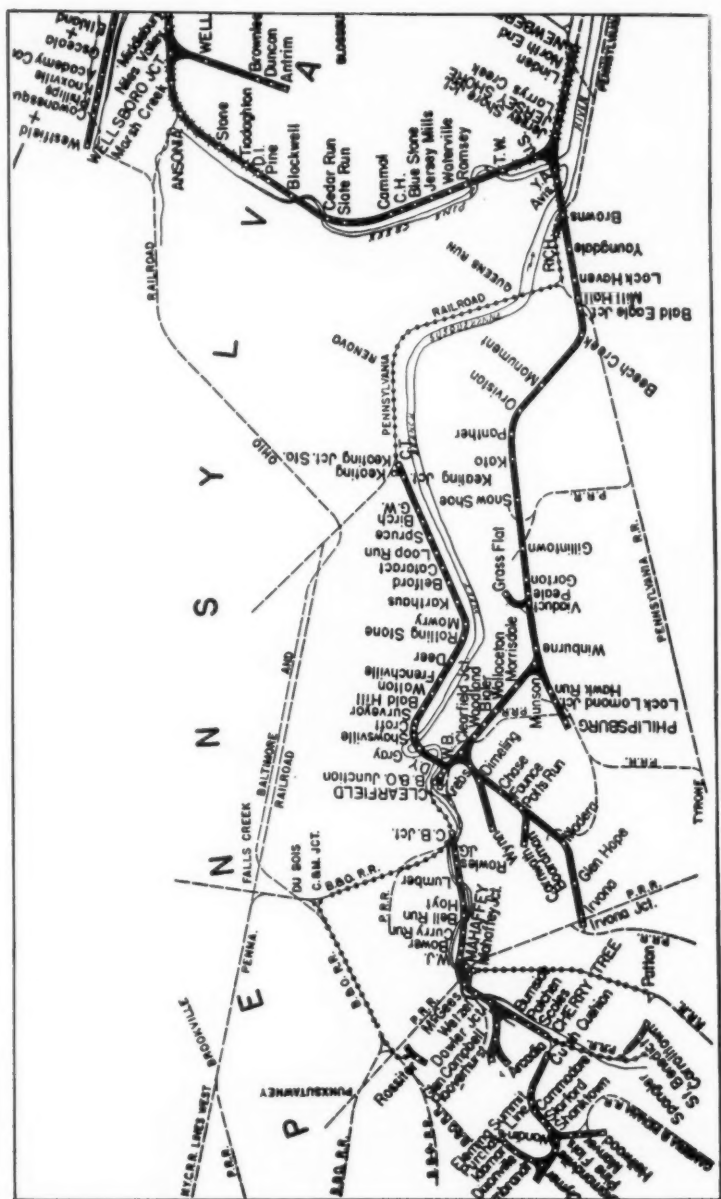
Although the New York Central lines did not reach to the properties of the Clearfield Bituminous Coal Company, it acquired control of a line made up of the Corning & Blossburg, the Corning, Cowanesque & Antrim, the Pine Creek, and the Syracuse, Geneva & Corning which gave it access to Jersey Shore just west of Williamsport. And on August 11, 1882, articles of Association were drawn for the "Susquehanna and South-western Railroad Company" as follows:

"We, the undersigned, nine of whom are citizens of Pennsylvania, do hereby form a Company for the purpose of constructing, maintaining and operating a railroad for public use in the conveyance of persons and property under the provisions of an act of the General Assembly of the Commonwealth of Pennsylvania entitled 'An act to authorize the formation and regulation of railroad corporations' Approved April 4th, A.D. 1868 and the acts supplementary thereto; and for that purpose do make and sign these as our articles of association.

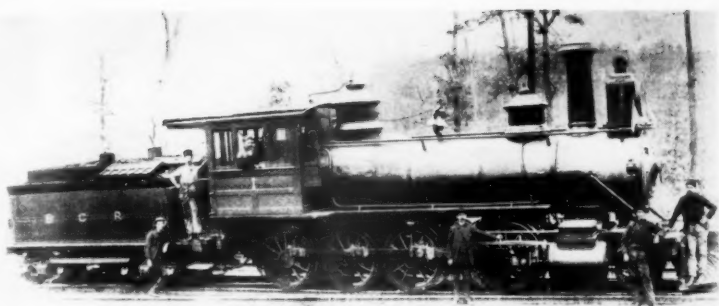
"First—That the name of the said Company is the Susquehanna and South Western Railroad Company.



A. G. Palmer, Supt. BCRR 4-1-1884 to 5-1-00. Supt. Penna. Div. NYC 5-1-00 to 11-1-01  
Up from Engineering Dept. Syracuse, NY. Born 1848 Died 1910

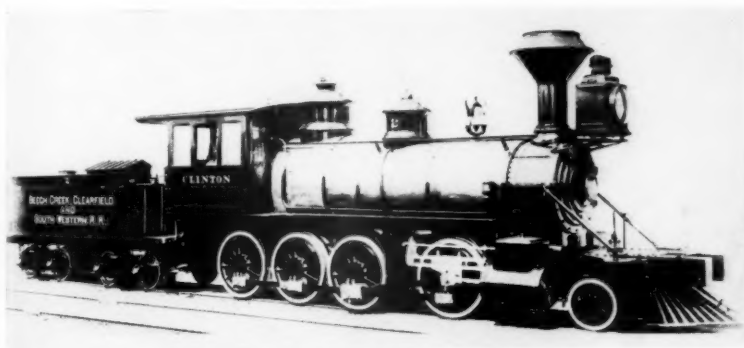


Map of the Beech Creek R. R.

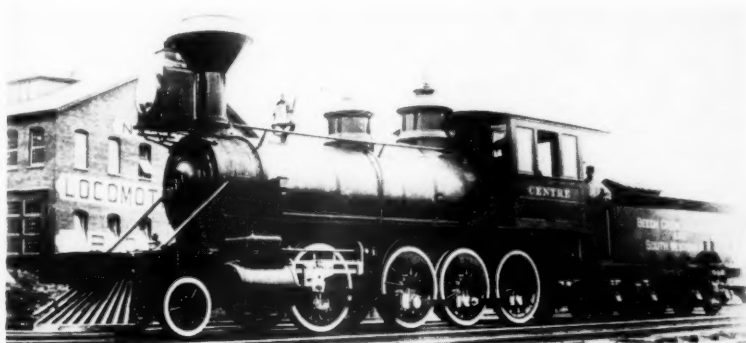


Courtesy of Carl F. Graves

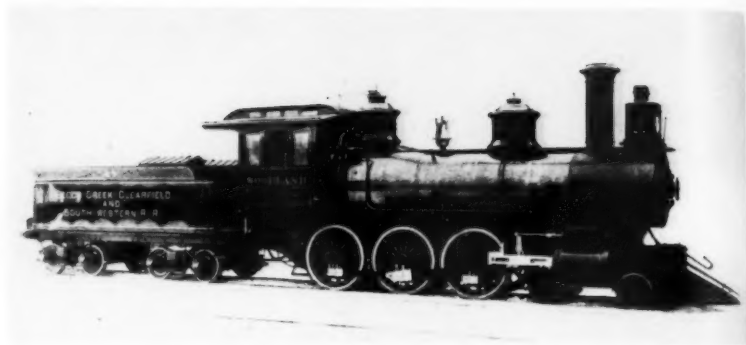
Beech Creek #1 originally B. C. C. & S. W., Schenectady Wks., Dec., 1883  
Later became N. Y. C. #2255, class G-11A



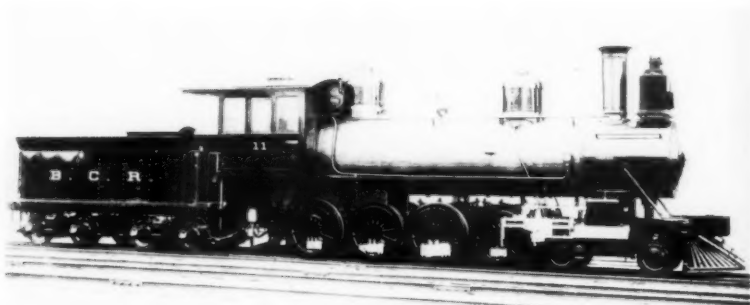
Beech Creek R. R. #2 "Clinton". Schenectady, 1884



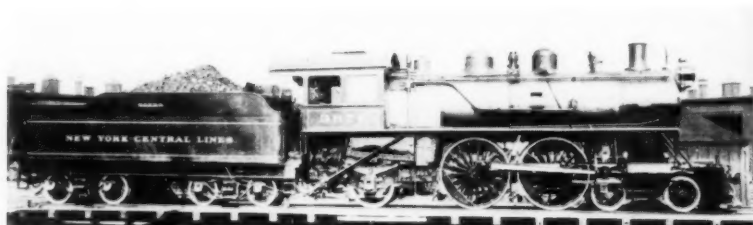
Beech Creek R. R. #3, "Centre". Schenectady, 1884



Beech Creek R. R. #24, "Woodland". Schenectady, 1885



Beech Creek R. R. #11. Schenectady, 1887



Courtesy of Carl F. Graves

N. Y. C. Lines (Beech Creek Extension R. R.) #3876, Schenectady Wks. June 1905

"Second—That the said Company is to exist for the term of 999 years.

"Third—That the places from and to which the said railroad is to be constructed or maintained and operated are as follows, namely, from, at, or near Williamsport in Lycoming County, Pennsylvania, to the southern line of Clearfield County, Pennsylvania.

"Fourth—That the length of said railroad will be as near as may be 100 miles.

"Fifth—Capital stock is to be \$4,000,000 being at least ten thousand for every mile of road constructed or proposed to be constructed and shall consist of 80,000 shares, par \$50.

"Sixth—The president and directors for the first year shall be :

President—William A. Wallace, Clearfield, Pa.....	26,657 shares
Directors—John G. Reading, Philadelphia, Pa.....	26,657 shares
S. R. Peale, Lock Haven, Pa.....	26,656 shares
Joseph H. Gazzam, Philadelphia, Pa.....	5 shares
Wm. H. Brown, Clearfield, Pa.....	5 shares
John M. Adams, Lock Haven, Pa.....	5 shares
B. Leslie Wallace, Clearfield, Pa.....	5 shares
Incorporators—Israel Test .....	5 shares
E. A. Bigler.....	5 shares

These articles of association were filed with the Secretary of State for the Commonwealth of Pennsylvania on August 12, 1882 and letters patent were issued on that date.

On August 14, 1882 the newly formed Board of Directors met and authorized the employment of Samuel Brugger as locating engineer at \$250 per month, he to immediately locate a line for a double track railroad from the mouth of Beech Creek to Clearfield and up Clearfield Creek to Madera with Branches to Little Clearfield and near Ansonville and from the mouth of Beech Creek by Lock Haven to a connection with the Jersey Shore and Pine Creek Railroad at or near Jersey Shore. The gradients upon said line were to be as light and the curvature to be as low as practicable for a first class road.

Samuel Brugger lost no time in making his survey—on September 27, 1882 he submitted his report showing the location of a line from Snow Shoe Summit east by Beech Creek to Bald Eagle Valley canal and from Moshannon Creek west to a point near Woodland, and his report was approved.

At the same meeting on September 27, 1882, the President of the company was instructed to file a bill in equity against the Pennsylvania and Western Railroad Company to restrain them from interfering with the Susquehanna and Southwestern or from occupying the above location. And here we find evidence of a feud which shook the financial world and very nearly lost the infant railroad to the Vanderbilts.

The Pennsylvania Railroad and the New York Central & Hudson River had long been bitter competitors for freight business. Also a man named John Webster Wagner, formerly station agent for the Central at

Palatine Bridge, had organized the New York Central Sleeping Car Company which operated Wagner's Palace Sleeping Cars over the Central from New York to Cincinnati and Cleveland. Mr. George Pullman, irate because the Central preferred Wagner's cars to Pullman's, was instrumental in organizing the New York, West Shore and Buffalo Railroad which would run up the west bank of the Hudson from Weehawken to Albany and then duplicate the Central's line from Albany to Buffalo. Service was opened to Buffalo by the West Shore in February of 1884.

In 1883, William H. Vanderbilt, head of the House of Vanderbilt and Director of the Central, unfolded plans for a new railroad to cross the state of Pennsylvania from Reading to Pittsburgh. In a meeting with Andrew Carnegie, Mr. Vanderbilt asked, "What do you think of it, Carnegie?" Mr. Carnegie replied, "I think so well of it that I and my friends will raise \$5,000,000 as our subscription." "All right," said Mr. Vanderbilt, "I'll put in \$5,000,000." That fall construction was started a short way south of the Pennsylvania's main line between Harrisburg and Pittsburgh and the route of the "South Pennsylvania Railroad" was to be twenty-five miles shorter than the Pennsylvania's main line.

While the South Pennsylvania was a-building, Pennsylvania Railroad interests gradually acquired substantial blocks of the rapidly-becoming-bankrupt West Shore bonds. On June 9, 1884 the West Shore entered bankruptcy and promptly, in the interest of the Pennsylvania, started a rate war with the New York Central. Transportation could be purchased from New York to Chicago for \$8.00.

In July, 1884, J. Pierpont Morgan, young New York banker, entered upon the role of peacemaker and summoned Chauncey Depew, new president of the Central, and George Roberts and Frank Thomson of the Pennsylvania to a conference aboard his magnificent steam yacht, the "Corsair." By sublime diplomacy, Morgan persuaded Depew to purchase the West Shore and Roberts and Thomson agreed to buy the South Pennsylvania. As additional concessions Vanderbilt agreed to withdraw from the Pennsylvania's competitor, the Philadelphia & Reading, and to sell to the Pennsylvania the infant Beech Creek. However, the governor of the commonwealth decided to have his say in the matter and, having no love for the Pennsylvania Railroad which had campaigned against his election, invoked a statute of 1874 which forbade railroads to take over rival or competing lines. So the Beech Creek remained within the Vanderbilt fold after all.

Interesting postscript to the Pennsylvania - New York Central battle of the 80's lies in the final disposition of the South Pennsylvania's right of way. The work was completely abandoned by the Pennsylvania Railroad interests, the tunnels became clogged with debris, trees overgrew the gradings, and the South Penn was hardly a memory in the late 1930's when the WPA moved in and studied the possible use of the right-of-way as the basis for a low-grade, high-speed super-highway across the state. Construction was started in October, 1938 and the Pennsylvania Turnpike was substantially completed by June, 1940.



Peace did not descend upon the New York Central - Pennsylvania Railroad territory until the summer of 1884. Construction of the Beech Creek was started late in 1882. On January 10, 1883, President William Wallace reported expenditures to date as follows:

Organization expense	\$ 225.00
Engineering costs	2,940.54
Legal expense	360.00
Right of way	1,250.00
Construction	85,000.00
Total	\$89,775.54

and on that same day the directors elected Cornelius Vanderbilt as Vice-President and Treasurer of the company. The directors also voted that, whereas it was found that a railroad was already in existence under the name of Susquehanna and Southwestern Railroad Co., steps should be taken to change the corporate name to Beech Creek, Clearfield and South Western Railroad Company. This action was approved by the state and the name legally changed on March 20, 1883.

The day after the meeting recorded above, January 11, 1883, the directors again met and entered into an agreement with the Jersey Shore, Pine Creek and Buffalo Railway Company, the Corning, Cowanesque and Antrim Railway Company, the Syracuse, Geneva and Corning Railway Company, the Geneva and Lyons Railroad Company, the Fall Brook Coal Company, the New York Central and Hudson River Railroad Company and the Clearfield Bituminous Coal Company under which mines and collieries, capable of producing 500,000 tons of coal annually, and 200 coke ovens would be constructed and the entire product would be shipped over this "Northern Line." The Susquehanna and South-Western agreed that "it will not divert or allow to be diverted any freight, if in its power legally to prevent it, or business from its line, to any other line of railroad for transportation to the points and markets aforesaid." And this agreement was to last for a mere 900 years!

Of equal importance to the completion of the railroad was a contract entered into by the directors on January 11, 1883 with George J. Magee of Watkins, N. Y., under which General Magee was to construct a single track railroad—by January 1, 1884. The road was not completed by that date, but General Magee's contribution to both the construction and management of the road was such that on May 18, 1897 the Directors of the company passed the following resolution:

"George J. Magee was one of the promoters and corporators of the Beech Creek Railroad Co. Its railroad was constructed and equipped under his supervision and direction as general contractor. He was a member of its first Board of Directors and of its first Executive Committee and was thereafter annually unanimously reelected to each of said positions. He was a man of the strictest integrity, wise in counsel, and prompt and vigorous in execution.

"His services were of great value to this Company. He was a man of strong will, possessed of fine sensibilities, of much magnetism, and of

those qualities of heart and mind which commanded for him the sincerest friendship of those who came in close contact with him, and made valuable to them his faithfulness and devoted friendship. He was faithful to every trust. He died at Nice on the 11th day of March, 1897, and we, who knew him so well and esteemed him so highly, place upon record this tribute to his memory, and direct that a copy of this minute, suitably engrossed and properly certified, be forwarded to his family."

On March 6, 1883 the citizens of Lock Haven offered to pay \$26,000 to have the company's car shops located in their city. The directors approved the proposed line from Jersey Shore to Beech Creek and from Hurschthall Summit to Beech Creek. And they appointed a committee to negotiate with the Pennsylvania Railroad for the necessary crossings. The success of this committee (or lack of it) is indicated by the fact that at the Pennsylvania crossing just east of Gillintown, the Pennsy dumped an engine into a cut to prevent the Beech Creek from laying their rails. Again, just east of Philipsburg, the Pennsylvania refused to permit the Beech Creek to effect a crossing and kept a number of cars stored at the strategic spot as a barrier. But late one Saturday night the Beech Creek crew sneaked in, separated the cars, and built the crossing before the Pennsylvania boys knew they were there.

Actual building of the road was apparently started in March of 1883. Voucher No. 1 covering work done to March 31, 1883 totalled \$86,413.62 and included graduation work on sections 34 to 49 in the amount of \$63,954. July, 1883 vouchers included one for purchase of rolling stock of \$10,000 from the Pine Creek & Buffalo Railway Co. The first purchase of motive power appears in February, 1884 with the approval of a voucher to Schenectady Locomotive Works for \$9,500. This voucher presumably covered the purchase of Beech Creek, Clearfield and Southwestern's #1, a 2-8-0 with 20 x 24" cylinders and 50" drivers.

In June of the same year the company paid Buffalo Car Mfg. Co. \$25,862.50; in July they paid Harlan & Hollingsworth Co. \$28,951.25; and in August \$92,968.40 went to Michigan Car Co. In August, 1884 a voucher to Schenectady Locomotive Works was approved for \$87,228.02, in January, 1885 an expenditure of \$8,100 was authorized, and in February, 1885 another voucher of \$8,100 was approved. These three vouchers apparently covered the cost of the following locomotives:

#2 - 5	2-8-0	20 x 24" cylinders	50" drivers
#21-23	2-6-0	19 x 24" cylinders	58" drivers
#24-25	4-6-0	19 x 24" cylinders	55" drivers
#30	0-6-0	18 x 24" cylinders	50" drivers

Poor's Manual of Railroads for 1884 reported that "Work on this road was begun early in 1883. It is projected from Jersey Shore, Pa. to Ansonville, Pa., in the Clearfield coal regions, a distance of 103 miles." Subsequently Poor's reported (1886) that the main line was completed from Jersey Shore to Peale (57.76 miles) in July, 1884; extended to Philipsburg (15.58 miles) February 1, 1885; main line Ansonville Junction to Gazzam (36.7 miles) opened in July, 1885, and the Clearfield

Branch in December, 1885. This information coincides with the property accepted by the railroad from George J. Magee as contractor on January 1, 1886, as follows:

	<i>Main track</i>	<i>Sidings</i>
Main line, Jersey Shore to Gazzam	104.27 miles	17.94 miles
Tunnel Mine branch, Gorton Heights Sta. to Mines 1, 2, 3, 4	3.67	1.67
Grass Flat Branch, Viaduct Station to Grass Flat Mines	3.33	1.22
Philipsburg Branch, Munson Station to Steiners	7.63	2.33
Hawk Run branch, Hawk Run Jct. on Philipsburg branch to Hawk Run Mine	1.64	2.00
Clearfield Branch, Clearfield Jct. to Clearfield Town	3.91	.70
Totals	124.45	25.86
Total mileage, 150.31 miles		

also a narrow gauge branch from Gazzam to Ansonville, 2.01 miles.

Equipment: 16 engines  
 2 combination cars  
 10 cabooses  
 50 flat cars  
 4 4-wheel dump cars  
 1 wrecking car  
 28 hand cars  
 5 passenger coaches  
 3 baggage cars  
 28 box cars  
 500 25-ton coal cars  
 1 15-ton derrick car

Note that the road was built with steel rail weighing 67 lbs. per yard.

There is no record as to the first date of passenger train operation on the railroad. Mr. Levi Williams of Jersey Shore, Pa. furnished the following information from his memory in 1949:

"... by that time the track had been laid to Peale Station. One train each way daily. They carried one coach. This was cut loose at Gorton, given a start, and it drifted to Peale Station. The engine and crew then did the mine work, got their train ready; they then went to Peale, picked up coach, returned to Gorton Heights, attached it to their train of coal cars, and started east."

In February, 1885, two first class trains and three second class trains were scheduled daily. Note that No. 1 was designated "Phila. & New York Express." See Employees' Time Table No. 3 reproduced on page 42.

Appleton's Guide for July, 1885 lists two "Ac." trains daily between Philipsburg and Williamsport effective May 25, 1885, as follows:

Philipsburg	Lv. 12:30 N'n	6:30 AM	Arr. 2:45 PM	9:55 PM
Williamsport	Arr. 7:10 PM	9:56 AM	Lv. 8:20 AM	6:05 PM

In 1886 the company was reorganized as "Beech Creek Railroad Company," the name by which it is known today. Poor's for 1887 reported "In the construction of the road a debt of \$1,300,000 was contracted, for which \$4,500,000 bonds were pledged as collateral. To pay off the debt which fell due in December, 1885, the stock was assessed 26 per cent. The road was sold under foreclosure June 4, 1886 and was bid in for \$1,300,000 by a committee of stockholders." The purchasers of the road were W. K. Vanderbilt, C. C. Clarke, Geo. F. Baer, C. J. Langdon and Joseph M. Gazzam.

\$1,300,000 of preferred and \$3,700,000 of common stock in the Beech Creek Railway Company was issued on June 29, 1886 and, in addition to the Vanderbilts, Peale, Wallace, Gazzam and others who became original shareholders, one Samuel L. Clemens received \$10,000 of the Stock. Mr. Clemens may be better known by his pen name of Mark Twain.

Apparently the Alder Run branch from Morrisdale Mines to mines was added, and at December 31, 1886 126.35 miles of main line and branches and 26.61 miles of sidings were in operation. During the first half of 1887 the Wells Run Branch (1.25 miles), the O'Shanter branch (1.25 miles), and 3500 feet of the Derby branch were constructed and the directors reported equipment in use as follows:

12 freight engines

4 passenger engines

2 switch engines

—  
18 engines

5 first class passenger cars

4 combination cars

1 baggage and express car

572 8-wheel freight cars

10 cabooses

120 8-wheel work cars

49 hand cars

On December 22, 1886 the directors reported that one locomotive had nearly been destroyed by an explosion and would cost \$6,000 to rebuild while three more locomotives were needed. The engine which blew up was No. 4, the Snowshoe, and the explosion occurred just west of the Jersey Shore station. Apparently the estimate of cost to rebuild was on the optimistic side, since the directors, on January 19, 1887 authorized a contract for three new consolidation locomotives at \$10,475 each and the repair of No. 4 for \$7,500. There was still a shortage of power on the road, however, and the general manager was authorized, on November 30, 1887 to buy three locomotives for \$10,520 each if they

were the same as the last previously purchased, or for \$11,320 if they were larger as suggested by the manager. On December 21 the manager reported that he had contracted for three engines at \$11,300 each and reference to the roster indicates that engines #11 - 13 were larger than #8 - 10.

On May 22, 1887 the Travelers' Official Guide lists three passenger trains daily in each direction,

#13 and #14 between Jersey Shore and Gazzam

#15 and #16 between Williamsport and Gazzam

#17 and #18 between Williamsport and Philipsburg.

#15, 16, 17 and 18 had New York and Philadelphia connections over the Philadelphia and Reading and #15 and #16 carried sleeping cars daily between Philadelphia and Clearfield.

On January 31, 1888 the directors authorized salaries to be paid as follows:

Superintendent	\$3,000 annually
General Freight & Passenger Agent	2,500 annually
Auditor	2,000 annually
Cashier & Paymaster	1,800 annually
Purchasing Agent	1,200 annually
Stenographer for Gen. Fgt. & Pass. Agt.	40 month
Private secretary for General Manager	400 annually

On February 29, 1888 a switch engine was sold for \$2,400 and on September 26, 1888 the sale of another old engine for \$3,250 was reported. On the latter date the construction of engine houses at Philipsburg and Clearfield were authorized, to cost \$3,286 and \$3,314 respectively.

In February, 1889 the company ordered 100 gondola cars to cost \$444 each and from Schenectady Locomotive Works one freight engine for \$10,125 and one passenger engine for \$7,750.

In June of 1889 the road was closed for about twenty days by a disastrous flood. The directors recorded that William Confare, a section man, with his wife and five children were swept away with their home and all drowned except a three year old girl. We are indebted to Mr. Levi Williams for the following account of his personal experience during the flood: "You ask what bridge was washed away in the '89 flood. It was the one just west of Mill Hall Station . . . There was no night operator at that point so the day operator remained on duty from early morning until he was excused late at night. That meant I had to remain there most of the time. So early in the morning of the flood I was awakened from my sleep by a terrific pounding on the office door.

When I woke up I found it was Louie Johnson, the section foreman. He said, "Get up, the whole dam place is flooded and the pig is swimming in the potato patch." I had a railroad tricycle and after being marooned at Panther Run for a couple of days I started for Hayes. Picked up the operator from there (think his name was Will Chatan) and it was with difficulty we arrived at Mill Hall. Since the bridge there was washed away we walked up to the Stone Bridge, then down to the office where Mr. Hills was agent. I called Jersey Shore and that was the first they had heard from up the road as all lines were down above Mill Hall. Of course the main office was curious to know how conditions were above there. I told them as best I could and believe me it was not a very rosy report. In many places the tracks were up on end and looked more like a fence than a railroad."

Mr. Williams' report was not unduly pessimistic. On September 25, 1889 the directors estimated that the expenses arising from the June floods were \$137,000. At that meeting, William Wallace resigned as president with the statement that "The connection with your company for the entire time since its organization has been pleasant and agreeable to me, and I leave your association with regret."

On April 1, 1890 the directors authorized the purchase of 500 30-ton coal cars for \$548.36 each and of 5 engines from Schenectady Locomotive Works for \$10,750 each.

On December 3, 1890 the directors met again and casually approved a lease indenture "that the railroad of the said Beech Creek Railroad Company, of Pennsylvania, shall be leased to The New York Central and Hudson River Railroad Company, of New York, and shall be run, used and operated by the latter Company. . . . for the full term of nine-hundred and ninety-nine years from the first day of October, A.D. 1890." The lessee guaranteed interest on outstanding Beech Creek bonds and dividends at the rate of four per cent per annum on the common stock. To this same meeting Gen. George J. Magee submitted his resignation as General Manager and J. D. Layng of New York was appointed to replace him. Mr. Layng was also General Manager of the West Shore Railroad.

Immediately following the lease to the New York Central, a program of expansion was initiated. The following lines were approved by the directors within the following two years:

March 28, 1891	From near Gazzam (called Kerrmoor) to the north line of Cambria County near Westover.
September 17, 1891	Mahaffey to La Jose
November 12, 1891	Mahaffey to Cherry Tree
	Cherry Tree to Homer

Actually the "Kerrmoor Extension" from Kerrmoor to Mahaffey Jet. (13 miles) plus 4.11 miles of branches to mines was built during the year ended June 30, 1892.

Apparently, instead of building the extension from Kerrmoor to Westover, the Beech Creek negotiated with its one-time enemy, the Pennsylvania, and secured operating privileges over the Cambria and



N. Y. C. Bridge at Viaduct, Pa., Westward



Beech Creek R. R. Pass of 1899

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Clearfield Division of the Pennsy from Mahaffey Jet. to Patton. This agreement was approved by the Beech Creek directors on May 20, 1892. The Travelers' Official Guide for 1895 shows one passenger train in each direction between New York and Mahaffey and another train in each direction between New York and Patton. Eastbound the train left Patton at 3:30 PM and arrived in New York via Philadelphia & Reading at 9:30 AM next morning. The New York connection was made at Williamsport with the P & R.

In 1896 the Cambria County Railroad was chartered and built 9.49 miles of track from Patton (Wigton Jet.) to Spangler, Pa. The line was built to afford an outlet for coal mined by the West Branch Coal Co., controlled by the Beech Creek Railroad, and was opened on February 1, 1897. The Cambria County was consolidated with the Beech Creek on May 8, 1898.

On December 28, 1894 three small companies, the Philadelphia and Pittsburgh, Loyalhanna and Youghioghenny, and Pittsburgh and Eastern, consolidated as the Pittsburgh and Eastern Railroad and projected a line from Mahaffey to West Newton, Pa. at which point they would connect with the Pittsburgh and Lake Erie Railroad. Construction was started at Mahaffey in April, 1896 and the line had reached ten miles to Glen Campbell on November 16, 1896. On June 1, 1897 the line was opened to Arcadia, and that was as near to West Newton and the P & L E connection as it ever got.

While these branches were being built in Pennsylvania, romance touched the Beech Creek in Paris, Newport and New York. On the evening of August 28, 1895, after a season in Paris, Mrs. W. K. Vanderbilt presented her daughter Consuelo to New York and international society. Present was His Grace the Ninth Duke of Marlborough. Shortly Mrs. Vanderbilt announced the engagement of her daughter to His Grace. After the wedding on November 6, 1895 Mr. W. K. Vanderbilt signed a contract which read in part, "Between the Most Noble Charles Richard John, Duke of Marlborough, of Blenheim Palace, in the County of Oxford, England, party of the first part, and William Kissam Vanderbilt, of Oakland, in the county of Suffolk, N. Y., Esq., of the second part, Consuelo Vanderbilt, party of the third part, and Mr. Vanderbilt, their trustees, of the fourth part. Whereas, a marriage is intended between the said Duke of Marlborough and the said Consuelo Vanderbilt, and whereas pursuant to an agreement made upon the treaty for the said intended marriage, the sum of two million five hundred thousand dollars in fifty thousand shares of the Beech Creek Railway Company, on which an annual payment of four per cent is guaranteed by the New York Central Railroad Company, is transferred this day to the trustees. And shall, during the joint lives of the said Duke of Marlborough, Consuelo Vanderbilt, pay the income of the said sum of two million five hundred thousand dollars, unto the Duke of Marlborough for his life, and after the death of the said Duke of Marlborough, shall pay the income of the said trust fund unto the said Consuelo Vanderbilt for life..."

For fifty years and more the dividends of the Beech Creek, guaranteed by the New York Central, were paid to the Duke and Duchess of Marlborough or their trustees. On June 15, 1948 The New York Central Railroad Company addressed a letter to Owners of Capital Stock of Beech Creek Railroad Company, offering to purchase at any time before October 1, 1948 their Beech Creek stock at \$33.00 per share plus accrued dividends. The letter said, "This offer . . . grows out of application of this company to the Interstate Commerce Commission for authority to acquire control of Beech Creek Railroad Company through the purchase of a block of 50,000 shares of its stock." Moody's Manual of Investments adds the information that these 50,000 shares represents a 41 2/3 % interest which was held in a trust administered by H. S. Vanderbilt. As a result of this offer the New York Central held on December 31, 1952 54,013 shares of the stock, including the 50,000 shares which constituted Consuelo's dowry. At last the Beech Creek was a Central subsidiary instead of a leased line.

The Beech Creek, although leased to the New York Central on October 1, 1890 was independently operated until July 1, 1899. On that date it became the Beech Creek District of the Pennsylvania Division of the New York Central and Hudson River Railroad.

On March 26, 1901 the Beech Creek Extension Railroad was formed by consolidation of the Susquehanna and Clearfield Railroad Co., the Canoe Creek R. R. Co., and the West Branch Valley R. R. Co. The Susquehanna and Clearfield had been chartered December 8, 1879 and built a 25 mile line from Keating to Karthaus, Pa., which was opened in 1885. This line was operated as a branch of the Pennsylvania Railroad until the Beech Creek Extension was completed.

The Canoe Creek R. R. Co. was chartered May 22, 1900 and built the 3 mile line from Elbell (Rossiter Jct. on the Pennsylvania R. R.) to Rossiter. The West Branch Valley was chartered November 7, 1898 to build a line from Karthaus to Clearfield. This line was completed and the entire Beech Creek Extension put into operation on July 1, 1902.

Employees' Time Table No. 11 dated November 23, 1902 shows the following lines in operation in the Beech Creek District:

<i>Daily passenger trains</i>	
Jersey Shore to Clearfield Jct.	2
Clearfield to Mahaffey Jct.	6
Clearfield to Keating (River Line)	1 mixed
Mahaffey to Arcadia (P & E Branch)	2 mixed
Munson to Philipsburg	3 and 1 mixed
Kerrmoor to Gazzam	4
Rossiter Junction to Rossiter	4

Note that P. E. Crowley was then Superintendent of the District.

The Hooverhurst and Southwestern Railroad was chartered on May 9, 1902 and opened the same year with 6.34 miles of track from Hooverhurst to Gorman Summit and Hillsdale Mine No. 4. The road was con-

trolled by Clearfield Bituminous Coal Corporation, a New York Central subsidiary, and operated as part of the Beech Creek District. It was merged into the Beech Creek Extension on December 30, 1913.

It was during 1903-4 that the Beech Creek Extension Railroad constructed its P & E Branch Extension from Dowler Jet. to Cherry Tree. The extension of this line from Cherry Tree to Idamar, 38.95 miles, was built by the Cherry Tree and Dixonville Railroad, chartered June 2, 1903 and opened December 1, 1904. The Cherry Tree and Dixonville is jointly owned and operated by the New York Central and Pennsylvania Railroads.

The Clearfield Southern Railroad was chartered July 6, 1898 to build a road 25 miles from Porters to Irvona. 14.6 miles from Porters to Hoovers Mill had been completed on June 30, 1901 and trains (1 locomotive and 1 combination car were the road's entire equipment) were operated regularly between Porters and Faunce and from Faunce to Hoovers Mill on special orders only. The road was purchased by the New York Central and Hudson River on October 1, 1903 and completed to Irvona by 1905.

On March 31, 1905, the original Beech Creek Extension Railroad Co., the Curwensville and Bower Railroad Co., the Pittsburgh and Eastern Railroad Co., and the Clearfield and Southern Railroad Co. were consolidated into the present Beech Creek Extension Railroad Co. which was then leased to the New York Central for 999 years from June 1, 1905.

The Curwensville - Bower line from C. B. Jet. to Curry Run was constructed by the Curwensville and Bower Railroad and opened July 18, 1904, providing an alternate route between Clearfield and Mahaffey. It is this line which is in use today, the original main line through Kerrmoor and Gazzam having been abandoned in 1937.

One further project which proved abortive was the attempt to secure a line from Keating Jet. to Lock Haven. The springboard for this line was to be the Scootac Railway, a six mile road built in 1902 from the North Fork to Scootac, Pa. Permission to build the line was denied by the Interstate Commerce Commission since it would have paralleled an existing line of the Pennsylvania Railroad.

The Annual Report of the Bureau of Railways, Department of Internal Affairs, Commonwealth of Pennsylvania, listed the following as the miles of line of the two Beech Creek companies on June 30, 1908:

*Beech Creek Railroad Company*

Name	Terminals		Miles of line
	From	To	
Beech Creek Railroad	Jersey Shore	Mahaffey Jet.	112.34
Branch	Munson	Philipsburg	7.52
Branch	Clearfield Jct.	Clearfield	3.93
Branch	Kerrmoor	Gazzam	3.78
Branch	Clearfield Br.	B. R. & P. Ry Co.	.18

Name	From	Terminals	To	Miles of line
Mine branches on which no passenger trains are operated				
"	Milburne	Summerville Mine		1.92
"	Philipsburg	Ophir		2.07
"	Viaduct	Pleasant Hill		7.89
"	Hawk Run	Morrisdale No. 6		2.24
"	Philipsburg Br.	Pardee		.89
"	Philipsburg Br.	Decatur		1.25
"	Philipsburg Br.	Lane		.76
"	Philipsburg Br.	Cuba		.69
"	Mitchells	Bloomington No. 5		1.53
"	Main Line	Bloomington Nos. 3 & 4		1.12
"	Wigton Jct.	Spangler		8.06
"	Penna R. R.	Pardee		2.13
"	Cambria Co. RR	Brawler		1.02
"	Cambria Co. RR	Mancher		.37
"	Penna R. R.	West Branch		1.45
"	Penna R. R.	Empire		.64
"	Cambria Co. RR	Victor No. 9		.65
"	Cambria Co. RR	Victor No. 10		.45
F. B. & B. C. Connection	Pine Creek Ry	Beech Creek R. R.		.39
Mine Branch	Todd Branch	Hartley		1.57

164.84

#### BEECH CREEK EXTENSION RAILROAD COMPANY

Beech Creek Extension	Keating	Clearfield	52.14
Beech Creek Extension	Curry	Curwensville	15.77
Beech Creek Extension	Dimeling	Irvona	26.76
Beech Creek Extension	Mahaffey	Arcadia	12.95
McGees Connection	P & E R. R.	P & N W R. R.	.35
Brown's Connection	Browns	McElhattan	1.22
Three Run Br.	Cataract	Potterdale	2.09
Canoe Creek Br.	Rossiter Jct.	Rossiter	2.86
Boardman Br.	Potts Run Jct.	Boardman	2.39
Cherry Tree Br.	Dowler Jct.	Cherry Tree	9.07
Victor 11-14 Br.	Junction	Mine	.45
Emigh Run Br.	Penna R. R.	Emigh Run	1.45

127.50

#### Beech Creek Railroad Company

In June, 1906 the Travelers' Railway Guide shows two passenger trains daily through between Williamsport and Patton. One train was scheduled between Clearfield and Keating, one train between Clearfield and Bower, one train between Boardman and Irvona, two trains between Mahaffey and Arcadia and one between Mahaffey and Cherry Tree, while four trains daily were scheduled in each direction between Rossiter and Rossiter Jct.

In June, 1925 The Official Guide lists passenger service from Williamsport to Patton, Arcadia and Cherry Tree, three trains between Cherry Tree and Idamar, one between Clearfield and Keating and one between Clearfield and Carnwath - Irvona. By 1935, the only passenger service listed over the Beech Creek District was one lone train over the

Cherry Tree and Dixonville Railroad between Cherry Tree and Idamar. And then this service disappeared, ending passenger service on the Beech Creek.

Moody's Manual for 1953 lists the following miles of line by the Beech Creek companies. The Beech Creek operated 95.66 miles from Jersey Shore to Hahaffey with 22.07 miles of branches, total mileage 117.73. In 1937 the I.C.C. authorized the Beech Creek Extension to abandon 17.21 miles of road in Clearfield County (Wynn to Gazzam to Curry Run) and they presently operate 122.49 miles of line from Keating to Clearfield, Curry to Curwensville and Bower Jet., Dimeling to Irvona, Mahaffey to Arcadia, and branches.

### THE HUMAN SIDE OF A RAILROAD

Statistics of miles operated, dates chartered, number of pieces of equipment, etc., are essential to any history and description of a railroad. But they ignore a most important element of any railroad, namely, the men who maintain the track, who maintain the equipment, who man the stations, who operate the trains which haul revenue tonnage over the road.

A listing of the operating personnel of the Beech Creek during its existence or even at any given date is prohibited by lack of space. However, through the efforts of Mr. Edmiston some of the older employees have contributed information which indicates that the Beech Creek had and has its very human side.

Mr. Levi Williams of Jersey Shore, Pa. wrote, "I remember when Jackie Boyer, Yard Master at Hawk Run, was murdered one Sunday evening between Philipsburg and Hawk Run. He got mixed up with a tough character named Mag McCann." Mr. Williams also wrote, "I remember one wreck on the big curve below Cato Crossing of a west bound train consisting of a number of new coal cars just out of the Milton Shops. A number of cars on rear end broke off and of course were stopped from running back, waiting for the front end to come and get them. Well, some of the front end did come back but not all of it. After proceeding for some distance up the hill another batch of cars broke off with no one on them. They ran down and smashed into the first lot. Of course, quite a wreck, all brand new cars never had a pound of coal in them and their first and last trip for many of them. Another peculiar wreck happened just east of Peale station. Early one morning a west bound train consisting mostly of P & R Jimmies, I think 15 or 17 of them jumped out of the middle of the train and went down over the bank. The conductor sitting in cupola of caboose saw them and remarked to some of his crew that some poor devil had it there last night. He did not know that he was the poor devil who lost those cars until the rear end smashed into the standing front end of the train at Viaduct. This sounds fantastic but it is a fact. You speak of Passenger engines 41 to 44. I remember the 42 in particular. That was Ard Swartz's baby and he did like her so much that he spent quite a sum of money to get a number plate

for the front end which could be seen in the dark. For Decoration Day he had the 42 almost covered with flowers, mostly wild honeysuckles. On his trip west the night before the 30th he would stop all along the line and pick up baskets of flowers that his friends had gathered for him. My mother and father who lived at the tunnel contributed largely to the flowers. They would have baskets waiting at east end of tunnel, even some clothes baskets full. Well, as you no doubt know Ard was an old bachelor or was at that time. After his train arrived at Philipsburg his friends gathered to decorate the 42 and on her way east the next morning folks gathered along the railroad or at depots just to see the 42 and it was a beautiful sight. Ard had lots of friends, especially among the ladies, so he had lots of help to aid him in making the 42 look pretty." In another letter Mr. Williams wrote, "Another wreck my brother Billy had was west of Peale in which 3 or 4 men were killed, not trainmen, but a gang of thieves and robbers. I saw their bodies after being taken out of the wreckage and laying on side of tracks. They were all well dressed and had newspapers spread on the floor of the open or drop end gondola. In the wreckage and on their bodies they found pistols, black jacks, masks, jimmies, gags, and other things that go to make up a robber's outfit.

"There was a wreck in the Peale Tunnel one time caused by the side stakes breaking on a car load of saw logs. Don't remember just what amount of damage done. Another piece of trouble in the Hog Back tunnel. In those days farmers and cattlemen turned their young cattle out in the mountains for the summer and would round them up in the fall. Frequently some of them would get on the railroad and be killed. This time a number of them got on tracks west of the Hog Back tunnel and as an east bound train approached they started running ahead of the train. But the train caught them in the tunnel." Mr. Williams does not say who got the steaks.

Mr. J. Harvey Myers, now a jeweler at Jersey Shore, wrote, "Was working in Avis Yard when the operator was murdered at Brown's Tower. Was what we called following the Goat in scale yard at Avis. I was youngest brakeman on crew and it was my duty to take the engine behind the train to push cars over scales to weigh the coal. Dewey Douglas and Pa Smith were the engineers. We heard shots and saw the light out at Brown's Tower the night of the murder and then investigated. Saw the operator lying under his desk with a spike maul near by that the Devil had hit him on the head with. Blood all over the floor."

Perhaps the best ending to this history of a fine railroad is the following poem entitled

## OLD TIMES ON THE BEECH CREEK

by A. G. (Bert) Hill

When memory keeps me company  
And moves to smiles or tears  
A weathered, ancient, Railroad Shack  
Looms through the by-gone years.  
From Beech Creek down the track it stood  
A full half mile or more  
Where rough shod feet a trail had worn  
Right to its battered door.  
Around that shack a dozen souls  
Were toiling night and day  
To weigh the coal and bill it out  
And speed it on its way.  
They named the station Beech Creek Scales  
And the call was just "CX"  
George Keagle was the boss in charge  
Of rates and routes complex.  
The day "op" there was Martin Gill,  
A kidder full of fun  
When I blew in to work there nights  
Way back in 1901.  
John Winslow was the artist there  
Who weighed the cars by day  
But when the day gave way to night  
'Twas Shoop who had his "weigh."  
Coal from the B. R. & P.  
Went gaily rolling through  
But local stuff went to our scales  
Where oft we heard "Weigh two."  
Upstairs Ed Layden billed some freight  
And Forcey did his stuff  
With Smull (the clown) and Bartley too  
And clerks chucked their bluff  
And here as Master of the Yard  
Hank Detrick ruled supreme  
Till Harry Henry, just at eve  
Took charge by lantern gleam.  
Bill Ruple was a brakeman bold  
And so was "Os" Delong  
Gray Hastings, too, and Tom Winslow  
Were members of the throng.  
And Engine twenty-two sixteen  
Was old enough to vote  
(Old West Shore) Yes, there she was  
Official CX Goat.



Now Davy Lucas "pulled her tail"  
 While Bufer Lannon made the steam (or did he?)  
 To kick the cars across the scales  
 And make her wheezy whistle scream.  
 And when they worked a full twelve hours  
 And claimed they'd done their stuff  
 John Bowes and Colonel Harvey took  
 That Goat the cars to shunt.  
 Those were the days, the good, old days,  
 With Asher Bennett, Chief  
 And Beezer Fleming on first trick,  
 Bill Hamler, his relief.  
 Jim Bennett, on the grave-yard trick  
 From midnight on to eight.  
 George Bullock over in "S R"  
 With Lyons as his mate.  
 Jack Peters wore the cap and badge  
 At Youngdale by the way  
 While Andy Harris, full of pep  
 Sold tickets at "C K"  
 Jim Harvey was his partner there  
 Who did the ticket work  
 Jim's over on the "Pennsy" now  
 Dispatching trains galore.  
 And Jewett Hills, he bossed the job  
 As agent at Mill Hall  
 Joe Roffe, Chief Clerk, and brother Fred  
 Who was it for "N D" call.  
 Young Tom Swisher was a ham  
 Who scarce could get his name  
 He's a B & O dispatcher now,  
 Well on his way to fame.  
 Then Harry Packer, next in line  
 Was agent at "B C"  
 While Charlie Bitner too was there  
 To hammer on the key.  
 On up the line we found at Mapes  
 The Ladies' pride and joy  
 Twas Charlie Long who ran "M A",  
 A happy, jolly boy.  
 At Monument, the brick works town  
 Clair Berry spent his days  
 And George Poust from Muncy town  
 "O S'd" em by at Hayes.  
 At Eddy Lick we had no OPS  
 Trains passed it like a flash  
 But stopped again at Panther Run  
 For Joe McCloskey's Big Mustache.



They stopped again at Kato  
     Where Frank Harvey was the works  
 And once again for Billy Moore  
     When they got up to the Forks.  
 Phil Fredricks worked a lonesome shift  
     At Snow Shoe, Cabin "J"  
 And Pat McLaughlin burnt the wire  
     At Gillintown "S M" they say.  
 The Boarding House at Viaduct  
     Had butter mighty strong  
 And for tough and stringy beef  
     Well, just ask Charlie Long.  
 Cris Singer's sleepy Morse was heard  
     A-coming from Rock Run  
 Frank Richard said the agency  
     At Munsons was no fun.  
 Mike Sherry worked at "D Y" yard  
     And Alex Black as well  
 Phil Barrow slung the code at "C"  
     Clear as a silver bell.  
 Well, boys, I left the railroad game  
     And grain is now my dish  
 Yet oft my thoughts go back to you  
     And oft it is my wish  
 That I might see and talk to you  
     The whole dad-blasted crowd  
 For friendships made on the old "B. C."  
     Yours Truly's mighty proud.  
 A year ago I wandered back  
     And took a look around  
 But naught was left at old "C X"  
     Not one was on the ground  
 There on the spot I stood a while  
     In silent reverie  
 When dreamily to me it seemed  
     In misty fantasie  
 The faces of that good old gang  
     Passed by in swift review.  
     "Weigh two, weigh two, weigh two."  
 And I heard a ghostly voice call out,

# THE BEECH CREEK, CLEARFIELD & SOUTH-WESTERN RAILROAD CO.

Time table No. 3

To Take Effect Monday, February 2nd, 1885

Trains are run by the New Standard, 75th Meridian Time

Westward				Eastward			
Second Class		First Class		First Class		Second Class	
Coal	Coal	Frt & Accom	P'burg	P&N	Frt & Accom	Coal	Coal
No 10	No 8	No 4	Exp	No 1	No 3	No 5	No 9
A.M.	A.M.	A.M.	P.M.	A.M.	P.M.	P.M.	P.M.
Local Distance				Distance			
4:30	11:00	7:30	8:30	10:05	Williamsport	3:5	
4:37	11:10	7:37	8:32	9:50	Newberry Jct	7:6	
4:50	11:27	7:50	8:45	9:40	Linden	13:2	
5:02	11:45	8:05	8:57	9:25	Larry's Creek	15:8	
5:10	11:57	8:15	9:02	9:15	Jersey Shore		2:45
	12:00		9:30	9:13	Jersey Shore Jct		2:40
5:30		8:35	9:55	9:10	Oak Grove	2:89	1:45
					Wayne	6:89	4:40
					Lock Haven	10:94	1:20
					Mill Hall	14:01	3:10
					Mill Hall Jct	15:15	12:48
					Beech Creek	20:18	12:45
5:45		8:52	10:10	8:35		(1:15)	
5:57	9:05	9:05	10:20	(12:45)		(2:55)	?
6:12	9:20	9:20	10:35	8:27	Mapes	24:07	?
6:22	9:30	9:30	10:43	8:20	Monument	27:38	1:30
6:33	9:42	9:42	10:53	8:13	Hayes Run	30:91	1:17
7:00	10:10	10:10	11:20	8:07	Coal Hill	33:33	1:07
7:15	10:25	10:25	11:40	8:02	Panther Run	35:98	12:55
7:30	10:40	10:40	12:00	7:47	South Fork	42:57	13:27
7:57	11:10	11:10	12:30	7:40	Snow Shoe	45:95	13:15
8:10				7:30	Snow Shoe Summit	49:19	1:15
8:20				7:17	Gorton Heights	55:24	1:00
8:30				7:12	Feale	57:37	11:30
8:55				7:05	Feale Jct.	59:75	11:17
9:15				7:00	Kyler's Mills	62:23	11:05
				6:47	Munson's Mills	67:32	10:52
				6:35	Hawk Run Jct	71:28	10:25
				6:30	Philpsburg	73:57	10:00

(No. 2 was the Philpsburg Express and No. 1 was the Philadelphia and New York Express. The time of No. 9 at Beech Creek and Mapes is so indistinct on this old time table that it is impossible to read it).

Locomotives Built for  
The Beech Creek, Clearfield & South-western R. R.  
By The Schenectady Locomotive Works

		Constr #			
B. C. C. & S-W #				N. Y. C. #	
	1	2-8-0	1883	1775 20x24" 50"	#2255
41-43	4-4-0	1884	1865-1867	17x24" 63"	702-704
2- 3	2-8-0	1884	1868-1869	20x24" 50"	2256-2257
	5	2-8-0	1884	1870 20x24" 50"	2259
	4	2-8-0	1884	1871 20x24" 50"	None
21-23	2-6-0	1884	1877-1879	19x24" 58"	1841-1843
	30	0-6-0	1884	1931 18x24" 50"	371
	24	4-6-0	1885	1947 19x24" 55"	None
	25	4-6-0	1885	1948 19x24" 55"	2198
6- 7	2-8-0	1886	2203-2204	20x24" 50"	2260-2261
2nd 4	2-8-0	1887	2331	20x24" 50"	2258
8-10	2-8-0	1887	2332-2334	20x24" 50"	2262-2264
11-13	4-8-0	1887	2422-2424	20x26" 51"	2600-2; 3600-2
	31	0-6-0	1888	2674 18x24" 51"	372; 201
	44	4-4-0	1889	2858 17x24" 63"	705
	14	4-8-0	1889	2859 20x26" 51"	2603; 3603
15-19	4-8-0	1890	3216-3220	20x26" 51"	2604-8; 3604-8
	32	0-6-0	1891	3605 18x24" 51"	373; 202
	20	4-8-0	1891	3606 20x26" 51"	2609; 3609
50-52	4-8-0	1891	3607-3609	20x26" 51"	2610-2; 3610-2
53-56	4-8-0	1893	3999-4002	20x26" 57"	2613-6; 3613-6
	57	4-8-0	1893	4029 20x26" 57"	2617; 3617
	33	0-6-0	1893	4030 18x24" 51"	374; 203
58-63	4-8-0	1893	4186-4191	20x26" 57"	2618-23; 3618-23
64-66	4-8-0	1897	4532-4534	20x26" 57"	2624-6; 3624-6
67-71	4-8-0	1898	4698-4702	20x26" 54"	2627-31; 3627-31

# Eight-Wheelers Between New York and Philadelphia

1870 - 1900

By PAUL T. WARNER

**FOREWORD**—In offering this article for publication in *The Bulletin*, I fully realize that many of the facts stated in it are already well known. I have endeavored, however, to present these facts in a new light, and to stress the importance of certain locomotives, such as the Pennsylvania's No. 2 and Reading engine 507, about which comparatively little has been published.

When I was seven years of age, the family moved from the center of the city to West Philadelphia. My new home was within ten minutes' walking distance of Powelton Avenue Station, which was about a mile west of Broad Street Station, the famous Philadelphia Terminal of the Pennsylvania Railroad, first opened for business in 1881. Powelton Avenue Station was on high ground, located above the tracks; and the station platforms were reached by stairways. A foot-bridge extended across the yard east of the station, giving access to the shops of the Philadelphia Division and to a large round-house, where were turned all the passenger locomotives of the Philadelphia and Maryland Divisions, as well as a considerable amount of freight power. All New York Division passenger locomotives were turned at a smaller (half-circle) round-house, a short distance north of the station, and in plain sight from the above-mentioned foot-bridge. A finer point of view from which to watch a great railroad in action could scarcely be imagined.

It was on the foot-bridge at Powelton Avenue that I received my early railroad education; and whenever a new passenger locomotive came down from Altoona to work out of Philadelphia—especially on the New York Division—the new-comer and I were soon acquainted. As an illustration: When I first began to observe, an old Baldwin 4-4-0, number 395, built in 1867, was one of the "yard goats", and had the job of hauling cars loaded with ashes out of the pit track at the New York Division round-house, and replacing them with empties. The 395 had her original short smoke-box, but the Laird balloon stack had been replaced by a Pennsylvania standard straight stack, and the Baldwin sandbox and dome casing by Pennsylvania standard designs. In the spring of 1887 this old veteran was retired, and a new 395 appeared—a handsome Class P flyer, which was placed in fast passenger service on the New York Division. I was not quite ten years old at the time, but well remember the incident. Shortly thereafter I was presented with a copy of the volume *Recent Locomotives*, and immediately began to absorb its contents. It is still one of my most valued possessions.

Opportunities to "watch the trains" on the Philadelphia & Reading were not particularly good, but I travelled over the Bethlehem Branch at times and kept my eyes open. One of the best trips on the Branch that I can remember was a south-bound run behind the old 411, when we made up nine minutes on a schedule of one hour and 32 minutes. That was in the 1890's.

All the locomotives mentioned in this article were scrapped years ago, but many of them are vivid in my memory and I wish to record these facts while such recollections are still with me.

P. T. W.

\* \* \*

In his "American Notes", Charles Dickens thus refers to his trip from New York to Philadelphia, made in the early Spring of 1842:—

"The journey from New York to Philadelphia is made by railroad, and two ferries; and usually occupies between five and six hours".

This "journey" evidently consisted of a steamboat trip from New York to South Amboy, N.J.; thence a train ride on the Camden and

Amboy Railroad to Bordentown, N.J., on the east bank of the Delaware River, and from that point to Philadelphia on a second steamboat. As early as 1840 there had been physical track connection between Jersey City and Kensington (Philadelphia) by means of three railroads, but the combination railroad-steamboat route was probably the more pleasant of the two.

In 1871 the Pennsylvania Railroad Company leased the Philadelphia & Trenton Railroad, together with a group of railroads in the State of New Jersey, and this gave them their own line between Jersey City and Philadelphia, located on nearly the same alinement as the Pennsylvania's present New York Division. About four years before the lease was consummated, there had been built the Connecting Railway, a line 6.4 miles in length, which provided track connection between the Pennsylvania's West Philadelphia yards and the line of the Philadelphia & Trenton Railroad. When, therefore, the lease became effective, the Pennsylvania had its own line from Pittsburgh to the Port of New York.

In 1868, the Pennsylvania had developed a line of standard locomotives for passenger, freight and switching service. There were eight different classes, all designed to burn bituminous coal, and having a maximum number of interchangeable detail parts.

#### *Anthracite Burners*

In 1873, to meet the requirements of the newly acquired lines in New Jersey, Altoona designed an anthracite-burning locomotive of the 440 type designated as Class C anth.—subsequently Class D-4. This was a modification of Class C (later D-3), one of the standard designs of 1868—a soft coal-burner used in general road service. Class C, with 17x24-inch cylinders and driving wheels 62 inches in diameter, was a typical all-around road engine of the period. It had a deep firebox placed between the frames and driving axles, and providing a grate area of 17.6 square feet. In the hard-coal burner, the firebox was kept between the frames, but was extended backward over the rear axle, to provide a grate ten feet long, with an area of 28.7 square feet. The boiler extended through the cab to the rear, and the total wheel base of engine and tender was extended 2 feet 4 inches; but the engine wheel spacing was not changed, and the machinery and most of the details were interchangeable in the two classes. An interesting feature of the first lot of hard-coal burners—road numbers 912 to 923 inclusive—was the use of a diamond stack; while as far as the writer knows, all the soft-coal burners of Class C had straight stacks. In 1875, 15 additional hard-coal burners were built. These apparently all had straight stacks, and were given scattering numbers to fill up blanks in the inventory. The total number of Class C anth. (D-4) locomotives built at Altoona was 37, including four which were assigned to the West Jersey Railroad and were lettered and numbered accordingly.

As speeds on the Philadelphia-New York run tended to increase, a group of Class C anth. locomotives—probably about 12—were partially

rebuilt, and fitted with driving wheels 68 inches in diameter. This reduced the rated tractive force from 11,890 to 10,840 pounds, the ratios of adhesion being respectively 4.73 and 5.12. As the average train of that time, exclusive of engine and tender, probably did not exceed 120 to 130 tons in weight, the locomotives were equal to the demands made upon them and apparently did good work. On one occasion engine 724, which had been rebuilt with the larger wheels, hauled a special train of two cars from Philadelphia to Jersey City, a distance of 90 miles, at an average speed of 58.06 miles an hour, including four stops; while the 26 miles from Trenton to New Brunswick were covered at an average of 65 miles an hour. The writer remembers seeing a number of these locomotives in his boyhood days. As he recollects, they were working local passenger trains on the Schuylkill Valley line, and also on certain branches such as the old "Bel-Del", running north from Trenton on the east bank of the Delaware River.

### *Heavier Power Needed*

The close of the 1870's saw increasing competition for the New York-Philadelphia business on the part of the Philadelphia & Reading Railroad—to which further reference will be made later—and it was becoming evident that power of greater capacity would soon be needed on the New York Division of the Pennsylvania. The result was the designing and building, at Altoona, of a trial locomotive of a new class, to be known as K, to which the road number 2 was given. This engine was completed in June, 1880; not much is known about it, and the writer has never seen a published description of it. In appearance it was so similar to Class CA anth. that, unless looked at closely, it could easily be mistaken for a locomotive of that class. The writer is fortunate in possessing a large erecting blue print of engine No. 2 which, although made from a rather battered tracing, plainly shows its most interesting features.

The new locomotive had the same size drivers (68" diameter) as Class CA anth. (D-4-a), but the cylinder diameter was increased from 17 to 19 inches. With a stroke of 24 inches, and a steam pressure of 125 pounds, which was probably carried, the rated tractive force was 13,530 pounds. The boiler diameter was increased  $2\frac{3}{4}$  inches, the outside diameter of the first ring being  $52\frac{1}{8}$  inches; but information is not available regarding the number of tubes or the heating surface.

The most unusual feature of engine No. 2 was the design of the main frames. The firebox was placed between the frames, as in the previous power, but the frames back of the main driving pedestals were in the form of slabs,  $1\frac{1}{4}$  inches thick, thus making it possible to increase the width of the grate from  $34\frac{1}{2}$  to 40 inches. The grate was composed of water tubes and was approximately ten feet long, the grate area thus being about 33 square feet. With the narrow frames and the firebox occupying practically all the space between them, it was necessary to use under-hung springs—probably the first instance of the use of such a device on the Pennsylvania. The driving boxes were extended downward, and the springs were supported by flexible hangers which were hooked into the extensions.

The old-style four-bar guides, with one-piece cast iron crossheads, were replaced on engine No. 2 with two-bar guides and alligator type crossheads. Strap stubs were used on the main and side rods; and in accordance with previous Pennsylvania practice, the side rods were placed next to the wheel centers, and the main rods took hold of the outer ends of the main pins. This necessitated placing the cylinder centers 81 inches apart, measured across the engine. The valve motion, of the conventional Stephenson type, called for no special comment.

The writer has no information regarding the weight of engine No. 2, but based on the known weights of Class CA anth. it would be fair to estimate the total weight at 88,000 pounds, with about 60,000 pounds on drivers. The locomotive did not prove successful; apparently it was a poor steamer, and gave much trouble because of hot journals. The cylinder diameter was reduced to 17 inches and the engine was relegated to local passenger service.

### *The Real Class K*

The failure of engine No. 2 led to the designing of an entirely new class of fast passenger locomotive, also designated as Class K. The first engine, No. 10, was completed at Altoona in March, 1881, and was followed by 17 others. The writer has distinct recollections of all these locomotives. The first nine, all built in 1881, were given scattering numbers to fill blanks in the inventory, viz: 1, 3, 10, 184, 260, 274, 317, 340 and 341. Numbers 956 to 959 inclusive, followed in 1882, and numbers 1066 to 1070 inclusive, in 1883. The first nine were built with short smokeboxes, but the last five, and perhaps those built in 1882, came out with extended fronts. There were a few other modifications in the several lots of locomotives, but the leading dimensions of all were alike; and the locomotives built with short smokeboxes were soon fitted with extended front ends.

Class K was a notable design in 1881, and the *Railroad Gazette* ran an elaborate description of it, which appeared in four issues of that publication. (Oct. 28, Nov. 4, 11, 18, 1881). The description and illustrations, which included a large assembly drawing, were republished in the volume *Recent Locomotives*. Class K was designed under the supervision of Theodore N. Ely, who was then Superintendent of Motive Power at Altoona. In appearance, the new locomotive was a decided contrast to those that had preceded it. The sandbox was removed from the top of the boiler, and two boxes were applied, placed right and left under the running boards and inside the wheel covers. The dome, placed over the firebox, had a plain casing with hemispherical top, and ornamented with two narrow encircling gold bands. The original intention was to dispense with a bell and use a gong on the smokebox front, and No. 10 was so equipped; but this proved unsatisfactory, so the gong was removed and a bell was mounted midway between the stack and dome. The beads were omitted from the base and cap of the stack, simplifying the outline in keeping with the general design. But probably the most striking feature was the large driving wheels, which were 78 inches in diameter. The cylinder dimensions were 18x24 inches; and with a steam pressure



of 140 pounds, the rated tractive force was 11,860 pounds. The records of the Railroad Company give the total weight of Class K as 96,700 pounds, with 64,900 pounds on drivers; the ratio of adhesion thus being 5.47. These weights are recorded in the official P.R.R. publication No. 109, "Classification and Description of Locomotives", and undoubtedly were taken after the extended smokebox had been applied. The total weight of No. 10, as given in the *Railroad Gazette* article, is 93,000 pounds, with 59,000 pounds on drivers.

Class K was designed to burn hard coal, and the firebox was placed above the frames, the top rails of which were horizontal between the driving pedestals. In the last lot of engines, built in 1883, the top rail of the frame was sloped toward the front, to give a deeper firebox throat. A water-tube grate was used, with two "pull-out bars" placed 20 $\frac{1}{4}$  inches apart transversely. These had eyes on the rear end, so that they could be withdrawn when dumping the fire. The crown sheet was flat, and was stayed by crown-bars, as was the usual practice at that time. The boiler had an outside diameter, at the front end, of 50 inches, and was built of steel plates throughout.

Class K was the first of the Pennsylvania's standard eight-wheelers in which the main rods took hold of the inner bearings of the crank pins, thus reducing the transverse distance between the cylinder centers from 81 to 77 inches. Two-bar guides with alligator type crossheads, similar to those used on the "odd K" engine No. 2, were applied; but there was a change in the main and side rod stubs. The side rods were of I-section, with solid-end stubs, while the main rods had a rectangular section, with a forked end at the rear and a filling block behind the brass. The valve gear was of the Stephenson type, as then almost universally used, with unbalanced slide valves having a steam lap of 1 $\frac{1}{4}$  inches and a maximum travel of 5 $\frac{1}{2}$  inches. With unbalanced valves and a steam pressure of 140 pounds, the engine would have been difficult to handle; and a power reverse mechanism was therefore applied. This device consisted of two cylinders, placed tandem-wise on the same horizontal center line, and mounted on the right-hand side of the boiler immediately in front of the cab. The forward cylinder was a steam cylinder, while the rear cylinder was filled with oil or other suitable liquid, and served as a locking device. A detailed description of the mechanism, which will be found in *Recent Locomotives*, states that "this apparatus enables the reversing gear to be handled with the utmost facility, and with almost no exertion on the part of the engineer. The engine can be reversed almost instantly, and it can be graduated with the most minute precision".

This may not have been the first power reverse to be applied to a locomotive, but if there was an earlier one, the writer does not know of it.

The tender used with Class K was of the conventional type, carried on two four-wheel trucks, and having capacity for 2,400 gallons of water and 12,000 pounds of coal. It was equipped with a manually-operated water scoop and weighed, fully loaded, about 60,000 pounds.

Such, in brief, was the Pennsylvania's Class K (D6); a locomotive which, when first built, attracted as much attention as the huge 4-8-4 or





Brown Bros. Collection

P & R #201, D-4f. Reading Shops 1886



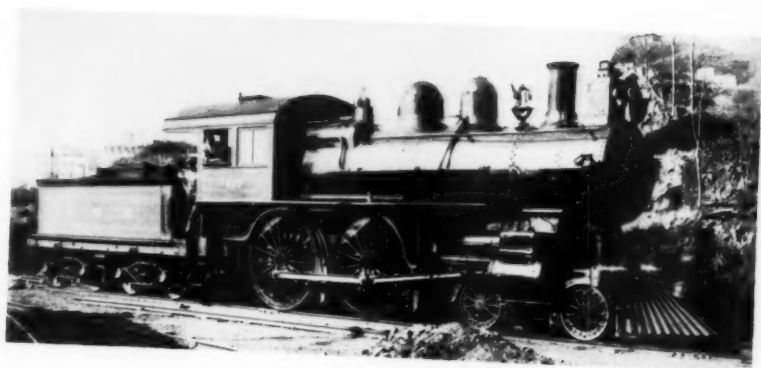
Brown Bros. Collection

P & R #385 en route to Jersey City. Baldwin 1895. 4-2-2 type



P. R. R. #1051, leading, D-8a Altoona, 1883

Brown Bros. Collection



P. R. R. #420. D-16a, Juniata Shops, 1895

Brown Bros. Collection

articulated designs which were being turned out a half-century later. That it was considered successful, is proved by the fact that three distinct lots were built, all for service on the New York Division. In the article in *Recent Locomotives* describing engine No. 10, reference is made to a fuel consumption test made with that engine and also with No. 724, a locomotive of Class CA-anth. (D-4-a). This showed a fuel consumption per car-mile of 8.32 pounds for No. 10, as compared with 12.76 pounds for No. 724—a saving of approximately 35 per cent.

#### *Class K's Supremacy Short-lived*

But the supremacy of Class K, in high-speed service on the New York Division, was short-lived. As far as details were concerned, these locomotives represented the most advanced practice of their day; but the design was not well balanced, and for that, the large driving wheels were chiefly to blame. With a given wheel arrangement, and definite allowable maximum weight and clearance limitations which dare not be exceeded, the locomotive designer must get maximum starting tractive force and steaming capacity—the latter factor determining the greatest horsepower that can be developed. Special conditions will at times make it necessary to sacrifice one feature of the design in order to give more prominence to another, and at the best the result is more or less of a compromise. In the case of Class K, starting tractive force was sacrificed in order to use 78-inch drivers, which were evidently considered necessary to meet the requirements of the New York-Philadelphia service. The boiler was made as large as the weight limits would permit and the cylinder dimensions were the largest that were practicable in view of the steaming capacity. But, other things being equal, the tractive force of a locomotive varies inversely as the diameter of the driving wheels; and in the case of Class K, the use of large drivers resulted in a locomotive with comparatively low starting power in proportion to weight on drivers, and with no boiler capacity to spare when the engine was working hard. These limitations began to be realized soon after the locomotives were placed in service.

In the middle eighties, when the writer first became acquainted with the Class K locomotives, the entire 18 were in service on the New York-Philadelphia run. At that time a typical New York-to-Philadelphia express was made up of five cars—a combination baggage and parlor-smoker, a P.R.R. parlor car, and three coaches. The first two were carried on six-wheeled trucks, and the coaches on four-wheeled trucks, and all were of wood construction with open platforms. Such a train, without passengers or baggage, probably weighed about 130-135 tons, and could easily be handled by a Class K engine at an average speed of about 47 miles an hour. But there were various other trains operating over the New York Division, including through trains from and to the West; and since the Pennsylvania had acquired the Philadelphia, Wilmington & Baltimore R.R. and the Baltimore & Potomac R.R., there was an increasing amount of through traffic on the New York-Washington run. The result was an increasingly difficult job for the motive power.

In the book, "Locomotive Engine Running and Management", by Angus Sinclair, published about 1886, there is an interesting account of a ride on a Class K engine hauling the New York and Chicago Limited from Jersey City to Philadelphia. The train was made up of six Pullmans weighing about 200 tons, and the locomotive evidently had all it could do to make the run on time.

### *Class P First Appears*

Proof of the inadequacy of Class K to fully meet service requirements is found in the fact that, immediately following engines 1066-1070 in 1883, Altoona turned out the first ten of a new Class, designated P—later D-11-a. These locomotives had the road numbers 1056-1065. Many of the interesting features which characterized Class K were found in Class P also, but the basic proportions of the two Classes were decidedly different. The cylinder diameter was increased from 18 to 18½ inches, and the driving wheel diameter reduced from 78 to 68 inches. With the same steam pressure—140 pounds—this increased the rated tractive force from 11,860 to 14,370 pounds. The boiler diameter was increased from 50 to 54 inches, and the total heating surface from 1230 to 1530 square feet. On a percentage basis, this meant for Class P as compared to Class K:—

an increase in rated tractive force of 21%.
" " " heating surface of 24%.
" " " total engine weight of 4%.

The ratio of adhesion in Class K was 5.47, but in Class P it was 4.72; showing that the weight on drivers, in the latter class, was far better utilized for traction. It should also be noted that whereas Class K provided 174 square feet of heating surface per cubic foot of cylinder volume, Class P provided 205 square feet, reducing the liability of steam failures when the engine was working hard. The grate areas were the same—34.7 square feet, this being the maximum that could be obtained in a firebox ten feet long and placed between the wheels.

In view of the success of Class P on the New York Division, its use was soon extended to other parts of the System—notably the Philadelphia Division between Philadelphia and Harrisburg, and the Philadelphia to Washington run over the Philadelphia, Wilmington & Baltimore R.R. and the Baltimore & Potomac R.R. When burning bituminous coal, which was always used on the runs just mentioned, part of the grate was bricked off, reducing the area to suit the fuel. It is the writer's distinct recollection that the Class P and K engines on the New York Division burned hard coal in the summer and soft coal in the winter; and he always noted the change in fuel with much interest.

### *The Belpaire Boiler Introduced*

In 1889 a revised Class P appeared, with a Belpaire boiler carrying a steam pressure of 160 pounds. Curiously enough, although the diam-

eter of the boiler was not changed, the number of tubes was reduced from 240 to 210, cutting down the heating surface from 1530 to 1384 square feet. In 1892 there was another modification, the principal change being an increase in boiler diameter from 54 to 57 inches, while the number of tubes was increased to 258, the total heating surface becoming 1571 square feet. On some of these locomotives, built in 1893, the steam pressure was raised to 175 pounds, giving a tractive force (with 68-inch drivers) of 17,970 pounds; the ratio of adhesion being 4.42. As compared with the original Class P locomotive of 1893, the total weight had been increased about 14 per cent.

### *Experimental Locomotives*

The Class P locomotives built during the years 1883 to 1893, with 68-inch wheels, represented a homogeneous group which were doing good work; but even before the last were built, it was evident that their days in main line express service were numbered. In 1892, three experimental 4-4-0 type locomotives, all designed for high speed service, were placed on the New York Division. They were as follows:—

No. 1504, designed and built by the Schenectady Locomotive Works. With 19x24-inch cylinders and 78-inch drivers, the 1504 was very comparable to the large Class I engines of New York Central used on the Empire State Express and other fast trains, of which the 870 was probably the best known example.

No. 1510, designed and built by the Baldwin Locomotive Works. With Vaucain compound cylinders and 78-inch drivers, this engine was practically a duplicate of a number that were in fast passenger service on the Central R.R. of New Jersey.

No. 1515, designed and built at Altoona, and designated Class T (later D-15); a two cylinder, cross-compound locomotive with 84-inch drivers, compounded on the Lindner system.

It was the original intention to burn oil in the 1515, but the design was changed to burn soft coal before the locomotive was completed. With low running boards and "splashers" over the drivers, there was something very "English" about the appearance of this engine. With 95,200 pounds on drivers, and a total engine weight of 145,500 pounds, the 1515 was probably the heaviest 4-4-0 in existence at the time she was built. But, as in most cases where two-cylinder compounds were tried in high-speed service, she was far from being an unqualified success.

### *Improved Class P's*

Based at least in part on the experience with these experimental locomotives, six "Improved P's" were built at Altoona in 1893—three for the New York Division and three for the P.W. & B. The design was based directly on that of the previous Class P group, with the wheel diameter increased to 78 inches and certain other minor changes—such as a small increase in the steam lap of the slide valves and a slightly longer valve travel. In appearance there was quite a change, as a sand-box of conventional design was placed on top of the boiler, instead of using two sandboxes placed under the wheel covers. Existing locomotives having two sandboxes were thereafter changed to conform to the new arrangement.

In 1894 another brand of Class P appeared—a design based directly on that of 1893, and having practically the same boiler, but with the cylinder diameter increased from  $18\frac{1}{2}$  to 19 inches, and having driving tires 4 inches thick, increasing the overall wheel diameter to 80 inches. The tractive force, with a steam pressure of 175 pounds, was 16,110 pounds, and the ratio of adhesion 5.42. The most important changes were in the machinery, which was redesigned throughout. A light-weight crosshead, working in a modified design of four-bar guide, replaced the “alligator” crossheads used on the previous power. The main rods had an I-section instead of a rectangular section as formerly used; and the pistons had a dished section, the cylinder heads being redesigned to suit their contour. The appearance of the driving wheel centers was greatly improved by the use of crescent-shaped counterbalance weights. The Pennsylvania’s standard straight stack, with a cast iron cap, was replaced by a one-piece taper stack, only  $13\frac{1}{2}$  inches in diameter at the choke; and a round-case headlight, supported on a neatly-designed bracket, was placed at the top of the smokebox front.

#### *Class L appears*

These locomotives, about 16 in number, worked for only a short time on the New York Division. In 1895 Altoona brought out a new design of fast passenger 4-4-0, first classed as P, later changed to L, and finally to D-16, with various sub-classes. The numbers originally assigned to the locomotives built in 1894 were assigned to the new Class L engines, and the earlier locomotives were transferred to the Philadelphia, Wilmington & Baltimore R.R., given new numbers, and placed on the Philadelphia-Washington run. They were modified in appearance, as the taper stacks were replaced by the older standard cap stack, and a square case headlight was placed on top of the smokebox extension. Subsequently, the 80-inch drivers were replaced by wheels 68 inches in diameter, and the engines were used in local service.

The Class L locomotives represented the final development of the 4-4-0 types as used on the Pennsylvania System. The cylinder diameter ( $18\frac{1}{2}$  inches) which had been used in all but one of the various designs known as Class P, was retained; but the stroke was increased to 26 inches, and the steam pressure to 185 pounds. Some of the locomotives had driving wheels 68 inches in diameter, but all those used in fast passenger service on the New York Division had 80-inch wheels, which gave them a rated tractive force of 17,500 pounds. The resulting ratio of adhesion was 5.33, which was comparable to that of the Class K locomotives and the high-wheeled Class P engines. Here again was shown the difficulty of providing a reasonable ratio of adhesion in a 4-4-0 design with large drivers—a difficulty which was overcome in the 4-4-2 type. The locomotives with 68-inch drivers, and a ratio of adhesion of 4.55, represented a better balanced design; but a larger wheel was needed to meet the requirements of the New York Division, and the new engines were a success in that service. They had a boiler of new design and greater

diameter than that of the last Class P locomotives, and the heating surface was increased from 1583 to 1905 square feet. The grate area remained the same, simply because it could not be increased without using an abnormally long grate for hand firing.

Until locomotives of the Atlantic (4-4-2) type were built in considerable numbers, starting in 1901, the L engines carried the load on the New York and other divisions, and they did a good job. The writer remembers the astonishment with which he looked at them when they first appeared, and he has happy recollections of riding engine 93 on Train No. 8—the old and highly-regarded “Day Express”—from Harrisburg to Philadelphia ’way back in 1901.

### *Fast Runs*

The various classes of Pennsylvania locomotives to which reference has been made undoubtedly had many high-speed runs to their credit, but the writer has found references to only a few which give sufficient data to make them of interest in this connection. The table of fast runs published in *Modern Locomotives* (1901 Edition) mentions a number of notable trips, but in several instances the information is incomplete and unsatisfactory. The following may be noted, however:—

May 15, 1883.—Engine 184, Class K, hauling four cars, ran 11 miles in 9 minutes 52 seconds; average speed, 66.89 m.p.h.

November 28, 1891.—Engine 340, Class K, ran from Jersey City to Washington, 227 miles, in 4 hours 11 minutes, hauling 3 cars weighing 250,000 pounds. Average speed, allowing for two stops, 56.75 m.p.h.

April 21, 1895.—Engine 1658, Class P (D-14), hauled a one-car extra from Camden to Atlantic City, 58.3 miles, in 45 minutes 45 seconds. Average speed, 76.46 m.p.h.

September 18, 1895.—Engine 1651, Class L (D-16-a), ran from Jersey City to Philadelphia, 89.6 miles, at an average speed of 53.88 m.p.h., hauling 7 cars weighing 663,820 pounds. On October 24, 1895, the same engine made the run at an average of 57.6 m.p.h. with 6 cars weighing 548,657.

### *The “North Penn” Enters the Picture*

We must now turn our attention to the Philadelphia & Reading Railroad which, during the latter 1870’s, became a competitor of the Pennsylvania for New York-Philadelphia business. Reference, however, must first be made to the North Pennsylvania Railroad—still frequently referred to as the “North Penn”—which was prominent in the picture until it was acquired under lease by the Philadelphia & Reading.

In 1874 the North Pennsylvania Railroad, whose main line extended from Philadelphia to Bethlehem, a distance of 56 miles, took a most important step in authorizing the construction of the Delaware River Branch, which extended from Jenkintown, Pa., to the State Line in the center of the Delaware River. Here connection was to be made with the new Delaware & Bound Brook Railroad, which extended thence to Bound Brook, New Jersey, where it in turn would connect with the main line of the Central Railroad of New Jersey. This would provide a new line between Philadelphia and New York, as follows:—



Philadelphia to Jenkintown	8.1 miles
Delaware River Branch	20.5 "
Delaware & Bound Brook R.R.	27.0 "
Central R.R. of N.J. (to New York)	32.4 "
Total	88.0 "

### *The Bound Brook Route*

The new line from Jenkintown to Bound Brook was double track, and most substantially built, with new steel rails weighing 66 pounds to the yard, rolled by the Bethlehem Iron Company. The maximum grades were 37 feet to the mile. Its construction was pushed as rapidly as possible, in order that it might be ready to handle a share of the increased Philadelphia business during the Centennial Exhibition held in 1876. It is listed in the old Official Guides as the "New York and Philadelphia New Line; Bound Brook Route", and was officially opened for business on May 1, 1876. There were five through trains, daily except Sunday, in each direction; the one-way fare was \$2.65, and the advertised time  $2\frac{3}{4}$  hours, including the ferry between Jersey City and New York, which required about ten minutes. The station in Philadelphia was at Third and Berks Streets, in the north-eastern part of the city, about three miles from the civic center.

The time table of October 9, 1876, shows a train leaving Berks Street, Philadelphia, at 7:30 AM, and arriving at Jersey City at 9:54 and at New York (Liberty Street ferry station) at 10:05. There were five intermediate stops between Philadelphia and Jersey City, and the actual total time was  $2\frac{1}{2}$  hours, because "Philadelphia Time" was used as far as Bound Brook, and "New York Time" (five minutes faster) from there to the end of the run. "Standard Time", as we know it today, was not adapted until November 18, 1883.

### *Motive Power of the New Line*

Apparently it was the custom, on the New York-Philadelphia run, to change locomotives at Bound Brook. Central R.R. of N.J. locomotives hauled the trains between that point and Jersey City, while between Bound Brook and Philadelphia the engines of the North Penn and the Delaware & Bound Brook Railroads were used. All power was of the 4-4-0 types, burning lump anthracite and having long fireboxes placed above the rear driving axle. The majority of these locomotives had driving wheels about five feet in diameter, and the largest had cylinders measuring 17x24 inches. They were probably all Baldwin engines, although the Central of New Jersey had some modern (for that time) power built by the Rogers Works at Paterson, New Jersey.

Among the locomotives of the Delaware & Bound Brook was a Baldwin engine built in 1876, and having the construction number 3860. It had 17x22-inch cylinders and driving wheels 62 inches in diameter. This locomotive was originally ordered by the C. of N.J. and was given the road number 168, and it formed part of the Baldwin exhibit at the Centennial Exhibition, held in Philadelphia in the summer of that year.



It was fitted with the C.R.R. of N.J. standard cab, pilot, stack, and other fittings, and was gorgeous with brass dome, sandbox, cylinder and steam chest casings, and brass bands around the Russia iron boiler jacket. But apparently the locomotive was purchased by the Delaware & Bound Brook before it was ever used on the C.R.R. of N.J., and its road number was changed to 106 and it was named "Abraham Browning". In the Baldwin Centennial Exhibition Catalog this locomotive is credited to the C.R.R. of N.J., while in the engineering department records of the builders it is listed as a Delaware & Bound Brook engine. This is liable to result in some confusion when searching through the records, as the writer has good reason to know.

### *The Reading Takes Over*

In May, 1879, the railroad world and the public generally were surprised to learn that the North Penn and the Delaware & Bound Brook railroads were about to be acquired under lease, by the Philadelphia & Reading, for a long term of years. The lease became effective on May 14, 1879. The acquired lines became known as the North Penn and Bound Brook Division of the Reading, the line from Philadelphia to Bethlehem being known as the Bethlehem Branch, and that from Jenkintown to Bound Brook as the New York Branch. The fastest train on the latter run covered the distance from Third and Berks Streets to the Liberty Street ferry house in New York in two hours actual time, making four stops (including Jersey City, where there was a transfer from train to ferry.) The Pennsylvania was running a similar train, but it made only one intermediate stop, and covered the 84 miles from Germantown Junction (North Philadelphia) to Jersey City in 106 minutes. It is interesting to note that the time of two hours was to stand as the fastest, on both roads, for the succeeding 30 years.

The Philadelphia & Reading had two stations in Philadelphia, both reasonably near the center of the City. One, at Broad and Callowhill Streets, served the main line to Reading, Pottsville and the coal regions; while the other, at Ninth and Green Streets, served the lines of the former Philadelphia, Germantown & Norristown R. R., which had been acquired by the Philadelphia & Reading in 1870. With the acquisition of the "North Penn", as it was popularly known, a connection was built from what is now Wayne Junction, on the Germantown line, to Tabor Junction on the North Penn. This connection, about two miles in length, was completed in October, 1879, and allowed the Reading to operate its New York trains into and out of the Ninth and Green Streets station, thus placing it in a better position to compete with the Pennsylvania.

At that time the bulk of the Reading's passenger traffic was being hauled by 4-4-0 type locomotives, which were direct descendants of the famous *Hiawatha* and *Minnehaha*, which had been designed and built at the Reading Shops by James Millholland in 1859. Those engines were pace setters in their day, and they represented the best in hard-coal burning passenger motive power. The firebox was placed above the frames and was extended back over the rear driving axle, and the crown and roof sheets sloped downward toward the rear, there being a marked simi-

larity to the Winans type of firebox. There were two steam domes, from both of which the steam supply was drawn; and the throttle valve was in the forward dome. A well-designed Stephenson link motion was applied; and while the locomotives were not handsome, they undoubtedly did good work. They were not particularly large engines of their type, as the heaviest weighed about 75,000 pounds, and had 17x22-inch cylinders and driving wheels 68½ inches in diameter.

#### *Baldwin Engine No. 5000*

With the prospect of increased traffic on the New York-Philadelphia run, the Philadelphia & Reading, shortly after acquiring the North Penn, began to give close attention to the motive power situation; and an order was placed with the Baldwin Locomotive Works for a passenger locomotive capable of maintaining a two-hour schedule between the two cities. On some lines considerable trouble was being experienced due to the breaking of side rods on four-coupled locomotives, and the Baldwin Works therefore decided to use only one pair of driving wheels on their new engine. The locomotive thus built was of the 4-2-2 type, and was given the builder's construction number 5000 and the road number 507. It weighed in working order 85,000 pounds, and normally carried 35,000 pounds on the driving wheels. With 18x24-inch cylinders and 78-inch driving wheels, and a steam pressure of 130 pounds, the rated tractive force was approximately 11,000 pounds, giving a ratio of adhesion of only 3.18. A device was therefore applied whereby part of the weight normally carried by the trailing wheels could be shifted to the drivers, increasing the load on the latter to 45,000 pounds and giving a ratio of adhesion of 4.09. This device was patented by William P. Henszey, one of the members of the Baldwin Firm, under date of May 18, 1880 (Patent No. 227,778). As applied to engine 507, the equalizing beams connecting the driving springs with those of the trailing wheels, were provided with fulcrum pins working in slotted holes. A steam cylinder, placed in a vertical position, was connected to a cam shaft extending across the engine; and when steam was admitted to the cylinder and the piston was forced downward, the shaft was rotated and the cams bore on the tops of the equalizing beams, and thus became the fulcrum points; the change in the lengths of the lever arms throwing more weight on the drivers and relieving the trailers of a like amount. The slotted holes in which the pins on the equalizing beams worked, permitted such a change in the location of the fulcrum points. The idea of course was that as soon as the train was well under way, the steam should be exhausted from the cylinder and the normal weight distribution should be restored. How effective the device proved in actual service, the writer does not know; but it is interesting to note that about 20 years later, traction increasing devices operating on the same general principle were applied to a number of locomotives, notably to a group of 4-4-2 type engines built by the American Locomotive Co. for the New York Central.

The boiler of engine 507 was of particular interest because of its design, and especially because the firebox was placed behind the driving

wheels and above the trailers. Hard coal was used for fuel, and the grate was 8 feet long by 7 feet wide, giving an area of 56 square feet. No combustion chamber was used, and the throat was fairly deep for a hard-coal burner. It is generally conceded that the first soft-coal burning locomotive to have a deep, wide firebox placed back of the drivers and over the trailing wheels was Burlington engine number 590, a 2-4-2 type built by Baldwin in 1895. We would not dispute that claim, but if the firebox of the 507 had been narrowed somewhat, to give a grate area suitable for bituminous coal—which could easily have been done—the result would have been the same as that achieved in the later engine. This fact should certainly be stressed in discussing the design of the 507.

A feature of interest on the 507 was the smokebox, which had a short extension. Immediately in front of the tubes was an inclined deflecting plate, adjustable as to height; and a horizontal screen of netting extended across the smokebox, on a level with the top of the high exhaust nozzle. The smokebox could be emptied of cinders through a cleaning hole placed under the extension. Within a few years, the use of the extended smokebox with adjustable deflecting plate and cleaning hole became very general.

The Baldwin Locomotive Works' catalog of 1881 contains a photograph and line drawing of engine 507, together with a letter from John E. Wootten, who was then General Manager of the railroad, giving an account of a round trip between Philadelphia and Jersey City, 89.4 miles each way, on May 14, 1880. Eastbound, with a train of four cars, the run was made in 98 minutes, and west-bound, with five cars, in 100 minutes. Mr. Wootten stated that "The best performance during the trip was in running the 2.8 miles from Willett to Langhorne, part of which distance is an ascending grade of 16 feet per mile, in 2 minutes." This is equivalent to a speed of 84 miles an hour; but as the running time between stations, in the majority of cases, is given in even minutes, the record cannot be accepted as strictly authentic.

Engine 507 apparently made a few trips over the Bound Brook Route, but as the Railroad Company was facing financial trouble at the time, the engine was sold to Lovett Eames, inventor of the Eames Vacuum Brake, and was taken to England to exploit his brake equipment. The writer has seen no record of the performance of the locomotive on the British Railways.

#### *Large 4-4-0 Type Engines*

In the meantime, the Reading Shops were busy turning out new passenger power for the Bound Brook Route. In a pamphlet entitled "History of the North Pennsylvania Railroad", by Jay V. Hare, Secretary and Treasurer of the Reading Company, published in January, 1944, reference is made to a report made by W. Lorenz, Chief Engineer of the Philadelphia & Reading Railroad. Referring to that report, dated January 6, 1881, we quote as follows from Mr. Hare's history:—

"It was stated that the traffic on the North Penn and Bound Brook Branches had been increased considerably in 1880, and to fit them for a service corresponding

to the magnitude of the trade it had been found advisable to equip those roads with motive power, both for passenger and freight service, unequalled by any other road. Such an increase in the tractive power necessitated an increase in the weight of the locomotives, and in order to secure a firm foothold to these ponderous engines, at their high rate of speed, much labor was spent in perfecting the roadbed and in strengthening the bridges", etc.

The above reference to passenger locomotives applied especially to engines 411 and 506, which were built at the Reading Shops in May and June, 1880, respectively. They were of the 4-4-0 types, and had Wootten boilers designed in accordance with a patent (No. 192,725) granted to John E. Wootten on July 3, 1877. A few locomotives of the same type had preceded them, but they were of considerably less power; and the 411, as far as the writer knows, was the first Wootten 4-4-0 type engine to be described in detail in the technical press. Such a description appeared in the *Railroad Gazette* of January 7 and 14, 1881, to be repeated in the volume *Recent Locomotives*.—The total weight of the locomotive, as there given, was 96,200 pounds, with 64,250 pounds on drivers. A stroke of 22 inches, which had been standard on Reading passenger locomotives for some years, was adhered to in this engine. The cylinder diameter was 21 inches, and with a pressure of 140 pounds and driving wheels 68 inches in diameter, the rated tractive force was 16,900 pounds, giving a ratio of adhesion of 3.8. The boiler provided a grate area of 76 square feet and a total heating surface of 1117 square feet. Although the Pennsylvania's class K and this new Reading locomotive were designed for similar service, their proportions were very different, as the following table shows:—

	P. & R.	P. & R.
Weight on drivers	59,000	64,250
" total engine	93,000	96,200
Tractive force	11,860	16,900
Ratio of adhesion	5.47	3.80
Cylinder Volume, cu. ft.	7.06	8.80
Heating surface / Grate area	34.6	14.7
" " / Cylinder vol.	170.0	127.0
Grate area / Cylinder vol.	4.93	8.64

(The above weights are those given in the *Railroad Gazette* article.)

### The Wootten Boiler

Engines 411 and 506 had boilers designed in accordance with the Wootten Patent, with a wide firebox placed entirely above the rear drivers, and a combustion chamber extending forward into the boiler barrel, and separated from the firebox by a raised water space and a wall of fire-brick. The crown sheet was horizontal and was radially stayed throughout, but the roof sheet sloped downward toward the rear, so that there was very little steam space at the back end. The mud-ring, instead of being a solid forging in one piece, was built up of flanged plates with a cross section like an inverted U. A grate composed of a combination of water-tubes and cast iron bars—the subject of another Wootten patent—was applied. The firebox was supported by vertical expansion links at the front and back.

The frames were built up, the top section of each frame consisting of two rolled bars placed side by side with a space between them. The driving box pedestals, and certain other fittings, were bolted into place between the bars. The cylinders were cast in one piece with extensions which were bolted together on the center line of the locomotive, forming a bed for the support of the smokebox. The latter was made with vertical sides and a flat bottom; an arrangement which had been used on the Reading for many years. For some reason or other, the vertical stack center was forward of the vertical cylinder center, so that two cylinder castings were not interchangeable, and separate right and left-hand patterns were necessary. The smokebox was short; it had a register in front for the admission of air, and contained a petticoat pipe and a low, single nozzle, the effective area of which could be modified by means of an internal, adjustable plug.

Due to the width and location of the firebox, the cab was located forward over the boiler barrel, so that engines 411 and 506 were among the first of the Reading "Camel backs".\* The dome was in the cab, and the throttle lever was placed in a vertical position along side the boiler. The reverse lever was mounted directly on the reverse shaft, no reach rod being necessary. Photographs of engine 411 as built, show two crosshead-driven pumps, with one injector, placed in the cab on the right-hand side.

The slide valves had an outside (steam) lap of  $1\frac{1}{8}$  inches, and were set with the unusually long travel (for that time) of  $6\frac{3}{4}$  inches. The Motive Power Department of the Reading, as early as 1880, was making a special study of steam distribution, and the success of these and other locomotives with moderate-size driving wheels, in high-speed service, was due in large part to the design of the valves and valve gear—backed by ample steaming capacity.

### *High-Speed Service*

An editorial in the *Railroad Gazette* called attention to the fact that the unusually large tank capacity of engine 411 (4500 gallons) made possible a run of 89.4 miles between Jersey City and Philadelphia without stopping for water. The schedule from Wayne Junction to Bound Brook, 55 miles, was 62 minutes, and on the run 53 pounds of anthracite were consumed per minute and 55 pounds of water were evaporated. It is further stated that an oil reservoir in the cab had "pipes leading therefrom to all bearings which are likely to need lubrication during the trip, and flexible tubes connecting with the water tank are so arranged as to deliver a stream of water to any of the axle bearings of the engine or tender". Truly, these were high-speed locomotives designed for strenuous service.

### *Improved Designs*

Engines 411 and 506 were followed by a large group of locomotives built by both the Reading Shops and the Baldwin Locomotive Works during the years 1881 to 1886, and having  $18\frac{1}{2}$ x22-inch cylinders. There were also four locomotives, road numbers 96-99, built at Reading

\*This excludes the Winans "Camels", built 25-30 years previously.

in 1884 and 1885, which had cylinders 21 inches in diameter. The majority of the locomotives with the smaller cylinders had driving wheels  $61\frac{1}{2}$  inches in diameter and were used in medium speed or local service; but there were more than 20 with  $68\frac{1}{2}$ -inch drivers, which successfully worked the fastest trains on the System. While these locomotives were generally similar to the 411 and the 506, various detail changes were made which improved their efficiency and reliability. Among these was the substitution of a solid forged mud ring, rectangular in cross section, in place of the inverted U-section; and the use of a horizontal roof sheet for the outside firebox, instead of the sloping roof, so that the inner and outer firebox sheets were parallel longitudinally, providing more steam room and reducing stay-bolt breakage. Other important changes were the casting of each cylinder in one piece with a half-saddle, which supported a smokebox of circular cross section, so that the two cylinders were reversible and interchangeable, requiring only one pattern for casting both; and the use of a solid forged main frame, with pedestals welded in place. The style of cab used up to about 1884, with four small windows on each side, was replaced by a three-window design, which was more convenient and gave the enginemen a better chance to get out alive, in the event of an upset or accident of any kind.

### *Fast Runs*

While the Wootten boiler was primarily designed to burn waste anthracite coal, it was the practice, on the New York-Philadelphia run, to burn lump coal and so lessen the liability of steam failures due to poor fuel. When engines 411 and 506 were placed in service, a second fireman—known as the “furnace door opener”—was employed. Schedules were fast, one 8-mile stretch being regularly covered at a speed of 72 miles an hour. The engines with  $18\frac{1}{2}$ -inch cylinders also proved very speedy, as shown by the following records, which the writer believes to have been authentic:—

May 9, 1884.—Engine 364, hauling four cars, ran 14 miles in 11 minutes 19 seconds, at an average of 74.2 miles an hour, and ran one mile in 46 seconds (78.3 m.p.h.).

March, 1890.—Engine 366 ran the 89 miles from Philadelphia to Jersey City in 85 minutes.

August 27, 1891.—Engine 206, hauling a special train, covered five miles at an average of 87 miles per hour, one mile of the distance being run in  $39\frac{3}{4}$  seconds, at 90.5 miles an hour.

The 206 was among the last locomotives to be built new at the Reading Shops for a period of some years, during which time all new power was built by the Baldwin Locomotive Works. These included a group of 4-4-0 type locomotives built in 1890, which were undoubtedly among the most successful ever used on the road. A number of similar locomotives had been built in 1889 for the Atlantic City Railroad (a part of the Reading System) and had done excellent work in the fastest passenger service. The Reading engines had the original road numbers 569 to 578, and to those were shortly added numbers 594 to 597, originally assigned to the Philadelphia & Sea Shore Railroad under the numbers 4 to 7.



### High Power per Ton of Weight

These locomotives were designed under the supervision of L. B. Paxson, Supt. of Motive Power, and as far as weight and general dimensions were concerned, closely followed those that had preceded them. All the improvements that had been developed since the building of engine 411 were of course incorporated in the design. The cylinder dimensions (21x22 inches) and driving wheel diameter (68½ inches) were retained, while the steam pressure was increased to 160 pounds. A steam-operated power reverse was applied, with the power cylinder placed on the right hand side, in front of the reverse shaft. The throttle and reverse levers were placed side by side, each working in a vertical plane, with a common center of rotation. The slide valves had an outside (steam) lap of 1¼ inches and an inside (exhaust) clearance of ⅛-inch, and were set with a maximum travel of 7 inches and a lead of ⅒-inch. The inside clearance advanced the point of exhaust opening, and that was an important advantage when running at high speed.

The issue of *The Railroad Gazette* for April 15, 1892, contained an article describing these locomotives and the work they were doing, and presented a number of most interesting indicator cards. One card, taken at a speed of 70.9 miles an hour (348 r.p.m.) while cutting off at 6½ inches, showed a mean effective pressure of 44.7 pounds, the corresponding indicated horse-power being approximately 1200. This, for a locomotive weighing only 105,470 pounds, and using saturated steam at a pressure of 160 pounds, was remarkable, as it represented one horse-power for each 89 pounds of locomotive weight. This would be a creditable figure for a locomotive using superheated steam at a far higher pressure.

The locomotives just described were the last of the 4-4-0 type specially designed by the Reading for the New York-Philadelphia service. They were contemporary with the Pennsylvania's Class D-12-a locomotives, designed for similar work; and a comparison of the two designs is interesting. Such a comparison is as follows:—

	P.R.R.—D-12-a	P.&R.—D-44
Cylinders	18½"x24"	21"x22"
Drivers, diam.	68"	68½"
Steam pressure	160	160
Grate area	33.2	76.0
Heating surface	1384.0	1325.0
Valves—travel	5"	7"
steam lap	¾"	1¼"
inside clearance	0"	⅛"
Weight on drivers	73,350	69,540
" total engine	106,500	105,470
Per cent. wt. on drivers	68.8	65.9
Tractive force	16,430	19,230
Ratio of adhesion	4.46	3.62
Cylinder volume, cu. ft.	7.46	8.80
Heat. surf. / cyl. vol.	185.00	150.00
Grate area / cyl. vol.	4.45	8.64

In its basic proportions, the Pennsylvania design followed conventional practice more closely than the other. The Reading locomotive, with its low ratio of adhesion, was doubtless the more "slippery" of the two; but with careful handling its higher starting tractive force could be utilized, and once under way, its huge grate and well-designed valve motion gave it a decided advantage. Some of these Reading locomotives were later partially rebuilt, and fitted with driving wheels 78 inches in diameter; and there were two "singles" of the 4-2-2 type, built in 1895 and 1896, which were subsequently rebuilt as 4-4-0's, first with 84-inch drivers, which were later replaced by 78-inch wheels. But by that time, locomotives of the Columbia (2-4-2) and Atlantic (4-4-2) types had taken over the bulk of the high-speed work, and the 4-4-0's were being used in local and less important service.

After the practice of changing locomotives at Bound Brook was discontinued, some of the Philadelphia-Jersey City runs were made with New Jersey Central power. The most notable 4-4-0 engines used were the Vauclain compounds of the 385 class, built by the Baldwin Locomotive Works in 1891-1893. They had long fireboxes placed above the frames, and 78-inch driving wheels. One of them, number 385, made a record of a mile in 37 seconds while hauling a regular Philadelphia-Jersey City train. The Pennsylvania locomotive number 1510, previously mentioned, was practically a duplicate of the 385.

Steam power is no longer a factor in the New York-Philadelphia passenger service. All the Pennsylvania trains are hauled by electric locomotives, and the Reading trains—in reduced numbers—by Diesels. The Reading service was materially cut during the period of World War I, and by far the greater part of the traffic has since been handled by the Pennsylvania. And the grand old 4-4-0's of 50 and more years ago are gone, too. A few of those old-timers, as used on both the railroads concerned, would today be museum pieces of great interest and value. What a pity that such a wonderful opportunity was neglected!

#### Editorial Comment:

On page 00, the author mentions the reason for Baldwin building P & R #507 of the 4-2-2 type due to the breakage of side rods. This, together with the breaking of crank pins is given as the reason in the 1886 edition of "Recent Locomotives."

However, this type was no innovation as the use of single driving wheel engines with either a bogie or pony truck had been used successfully in England for years. As early as 1848-9, Stephenson built two 4-2-2 type locomotives for the London & Northwestern and these were the only examples of this type, with outside cylinders, until Patrick Stirling commenced building them on the Great Northern (England), in 1870. These engines handled the East Coast expresses and gave excellent service for thirty years and, it would seem as tho' these and perhaps some of the other "singles" might have had something to do with the selection of this wheel arrangement by the Baldwin people.



# The Story of a Mountain Railroad

By FRANKLIN J. LANGSDALE

(1926-1948)

Although the publication of articles in the bulletin is limited almost exclusively to work of members of the Railway & Locomotive Historical Society, occasionally there comes to the editor's desk a story which, through its own merit, its general interest and its excellence of workmanship, warrants publication in the bulletin, and justifies the editor in making an exception to the rule.

Such an article is the following story of the Pittsburgh, Westmoreland & Somerset R. R., written by Franklin J. Langsdale, a talented young man, who devoted many months of research in preparing a history of this small and all-but-forgotten road of western Pennsylvania. His original article, published by the Somerset *Daily American*, is thoroughly documented and presented a record of source material. It is a pleasure to reproduce Mr. Langsdale's article, although in condensed form, omitting the documentation and, because of space limitation, certain of the sidelights and local history not pertaining directly to the railroad itself.

It is sad to relate the untimely death, in an airplane accident, in 1948, of this young writer whose work predicted a future of, among other things, a keen interest in railroads and their history.

F. S. G.

## *Early History and Civil Enterprise*

The first few phrases of the one hundred twenty-first psalm typify the spirit of a generation of people who lived in the tiny Pennsylvania town of Ligonier, fifty years ago. The town shared in the fighting history of western Pennsylvania, for it was in Ligonier that General Forbes launched his first attacks upon Fort Duquesne, which eventually led to its capture in 1758. Ligonier was to become an important link in the western movement that began in the 19th century.

From an Indian path, running through the hills, to the broad Lincoln Highway which now spans the mountains, Ligonier had its share of transportation problems. At first it was accessible only by foot or on horseback, but General Forbes and his men soon opened a road through the fern-bottomed forests and thus began the increasing struggle for speed.

Stagecoaches succeeded the horse in the evolutionary transportation business. They arrived from the east and from the west, and competition was necessarily keen. It was a daily event to watch two coaches racing down the narrow road that led to the square in the center of Ligonier. In the 1840's coach drivers enjoyed much the same reputation as our present day jockeys, who are well known for the number of races they win.

It was not until 1853, however, that several farmers in the Ligonier Valley area decided to build a connecting railroad to Latrobe, where the Pennsylvania had a main line station. The plan fell through because the farmers ran out of money, and the road was purchased by the Mellons, who chartered it in 1853 as "The Latrobe & Ligonier Railroad Company." After the railroad had begun operations in 1877, a supplemental charter changed the name to "The Ligonier Valley Railroad." This 16-mile link of steel served the valley well, but left the people beyond the village in the "horse and buggy" era. The L.V.R.R. also ignored the immense natural resources that lay beyond Laurel Ridge to the east.

A lapse of forty-six years occurred in railroad building, from 1853 to 1899, and the only transportation event was a railroad that was to be built over the mountain by Andrew Carnegie and Vanderbilt. This road, known as the South Pennsylvania Railroad, actually was chartered in 1863, when the Duncannon, Landisburg & Broad Top R. R. Company assumed the new name. Surveys were made and contracts awarded in the fall of 1883.

Cuts and fills left ragged scars across the state and a total of nine tunnels was completed through the mountains. We will be concerned with one of those tunnels, the Quemahoning, a masterpiece of construction in Somerset County.

The South Penn, which had cost a total of "ten million dollars", was never completed and no train ever ran over its extensive roadbed, for the Vanderbilts sold the railroad, uncompleted as it was, to the Pennsylvania R. R. Company. Eventually it was used in the construction of the Pennsylvania Turnpike.

The Ligonier *Echo*, a weekly publication that is still in operation, published stories hoping for a new railroad which would promote industry in Ligonier, especially the exploitation of the undeveloped area of coal and timber to the east. I. M. Graham, the editor, in 1899 was quick to encourage anyone interested in the commercial possibilities of Ligonier. So it was not unusual to see a story in the January 11th, 1899, issue with a bold, black one-column headline that stated, "New Railroad". Mr. Graham was hoping again. Hand set, the story began, "It is now about an insured (sic) fact that Ligonier is to have a new railroad, which is to run from Ligonier to Mechanicsburg and into the mountains to tap the timber and mineral land. W. H. Ruppel, Esq., a prominent attorney of Somerset, was here last Thursday (January 5th) and Friday, taking releases for right of way for the railroad along Linns Run to the Laurel Hill to connect with a large tract of timber and minerals."

The editor also stated that everyone was anxious to see the road built and that Mr. Ruppel was having no trouble securing releases. He ended the article with his usual civic attitude, "The people of Mechanicsburg and vicinity look upon the project with much favor, thinking it will be a business boom to that once-active mountain village. If the enterprise goes on, it will be begun in early spring or sooner."

It was "begun" in the early spring, but not before people from Ligonier and the ones from east of the town had bought up a great deal

of the land that the railroad might pass over or might use for a timber site. By April, negotiations were well under way and a sawmill site was finally located on the D. R. Marker farm at the eastern end of Ligonier.

But up in the hills the real work was progressing. Charles Greico, a contractor from Lock Haven, had promised to bring one hundred laborers if he secured the contract for building the road. All the available houses in the town would be rented to house the workmen who would come. Greico did get the contract and, after surveys were made, grading and laying the roadbed began on June 14th, 1899. The surveyors were never very far ahead of the laborers, and, from the route taken over the mountains the reason is rather obvious. The purpose of the road, of course, was to bring down logs from the mountain and manufacture them into lumber at the sawmill.

As the roadbed snaked its way along the Loyalhanna Creek and up towards Mechanicsburg, in the spring of 1899, the outside world was ignored in the rush of construction and the anticipation of the lumber mill opening. One hundred men were to be employed at the sawmill and on the railroad, and were to be recruited locally. Jobs for one hundred men out of a population of 1500 meant prosperity for Ligonier, the first the town had seen since the beginning of the Ligonier Valley Railroad.

The P. R. R. was only too willing to help the enterprise along, and soon rails, seventy pounds to the yard, began arriving over the L. V. Ties were shipped in; good substantial ties with an eight-inch facing. The roadbed itself was one of the very best, composed of the hard blue stone of the McCance quarries, to the west of Ligonier. The roadbed is easily traced today, even the rock is still firm and not scattered, as would usually be expected.

Not more than a mile and a half of track was laid when the railroad was chartered on July 20th, 1899, with a capital stock of \$220,000. It was to be known as the "Pittsburgh, Westmoreland & Somerset Railroad Company," but not even the owners knew if it would ever reach Somerset.

At the stockholders meeting held in Ligonier on the evening of July 24th, 1899, officers of the road were elected. J. Henry Cochran, of Williamsport, was chosen president; Lauros H. Allen, of Buffalo, was elected secretary-treasurer; and Captain Nelson Byers became general manager. At the same meeting officers were also chosen to direct the Byers-Allen Lumber Company, with Capt. Byers taking the presidency, and Mr. Allen also filling the position of secretary-treasurer of the lumber company. With capital stock of \$50,000, the lumber mill was second in importance.

Capt. Byers seemed to be the driving force behind the other "Capitalists", as the editor of the *Echo* describes them. He did not finance the road or mill as heavily as the others did, but he played a more important role as manager and president. Little is known about the founders except for brief notices of their appearance in Ligonier.

By August 16th, 1899, a reporter in Rector (formerly Mechanicsburg) sent word to the *Echo* that, "The new railroad is giving employ-

ment to everybody in this region. The roadbed is graded to beyond this place and soon ties and rails will be put down." September and October, 1899, were memorable months for the people of the mountain town, the L. V. R. R. completed an extension to the lumber mill, and two and one-half miles of track were awaiting the arrival of the first engine. On October 11th, the log loader arrived and the engine and cars were expected "any day now."

The first engine's arrival is described by I. M. Graham, of the *Echo*, who wrote, "T. I. Daniel, engineer for the P. W. & S. Railroad Co., went to Latrobe last Monday, and brought over the first engine for the road. The whistle of the engine was heard as it passed through the town and up toward the mountains."

Rumors, which circulate at meteoric speeds in small towns, but are more often called "general beliefs", soon began concerning the length of the road. Everyone seemed to think that the road would be extended to Somerset in the following year, but it was neither confirmed nor denied.

\* \* \*

### *The Advance to the Mountain*

Until the spring of 1900 the railroad had one definite purpose, to haul lumber to supply the mill that was jointly owned by the financiers of the railroad. Speculation as to the purpose of the road grew and the sawmill increased the advantages of the allied firms that might build in the valley.

The railroad had been graded as far as the top of Laurel Hill, by June 30th, 1900, a distance of ten miles from Ligonier, and proceeded only five miles further by November of the same year. This distance represented a great deal of work for, in some places on the western side of the mountain, the grade was more than twelve feet to the hundred.

On the evening of December 11th, 1900, a meeting was held in Somerset, concerning the extension of the road to that town. "The proposition is that the Somerset people shall raise \$50,000 toward extending the road from the top of Laurel Ridge to Somerset, to be taken in stock of the company," the *Echo* reported. The meeting was attended by the business men of Somerset, who invested heavily in the new road. Three banks in the town handled the stock of the road and it sold rapidly, for the people of Somerset saw a new avenue of commerce open to them and a short cut to Pittsburgh which would allow them to leave Somerset in the morning, remain in Pittsburgh all day and return in the evening.

By December 19th, a week after the stock had gone on sale, \$25,000 of it had been sold. The reasons why it sold so fast are multiple. The earning power of the road, if completed, would be very high. Various persons with an interest in the mineral resources had estimated that there were two hundred million feet of timber, thousands of tons of coal, and a quarry of bluestone which was used in Pittsburgh exclusively for block payments, by the railroads for ballast, and in road construction. Among the other minerals were fireclay, limestone, silica rock and sand rock which could be sold to glass companies. And last of all there was good

farming land along the projected track and the railroad would provide an efficient outlet to Pittsburgh markets.

Following the sale of the stock, Charles Greico and his laborers returned in the spring of 1901 to begin grading operations. The arrival of Greico, his family and sixteen laborers was noted in the *Echo*.

To aid the revenue of the road and to provide service for people along the right of way, the P. W. & S. purchased a passenger coach which could be added to a log train. The rattling coach was usually considered a nuisance by the crew, but the officials considered it important enough to rate a schedule. The *Echo* announced that a timetable appeared in the paper and that a passenger coach was put on the road on Monday morning, June 10th, 1901, and that three trips per day would be made from Ligonier to the mountain and return.

The schedule was set up in tiny figures and read as follows:—

In Effect June 10, 1901, except Sundays

*Southward*

	A.M.	A.M.	P.M.	P.M.
Ligonier Depot	6:30	8:00	2:00	6:45
Market Street		8:02	2:02	6:47
Byers Mill	6:35	8:05	2:05	6:50
Mechanicsburg	6:42	8:15	2:15	7:00
Rector		8:20	2:20	
Bluestone		8:40	2:40	

*Northward*

Bluestone		12:00	4:30	
Rectors Mill		12:20	4:50	
Mechanicsburg	6:45	12:30	5:05	7:02
Byers Mill	6:55	12:50	5:25	7:10
Market Street	6:57	12:52	5:27	7:12
Ligonier Depot	7:00	12:55	5:30	7:15

Stops will be made on signal to take on or let off passengers at Flytes Crossing, Brant, Mellon Crossing, Speedwell, Rockwood and Thomas.

By this time the railroad had begun their first passenger operations, but one coach was not enough to handle the volume, so flat cars, loaded with people instead of logs were hauled from Ligonier to the top of the mountain for a day of fun, and the P. W. & S. soon advertised regular excursions on Tuesdays and Thursdays. The excursion rates were fifty cents for round-trip tickets, children under ten years free, if accompanied by their parents. The passengers were sprayed with cinders and jolted by the hard, wooden floors of the flat cars, but they enjoyed the ride and always shared their food and fun with the engineer and crew.

The road to Somerset proceeded slowly. The owners were not aware that the timber tract they had bought was underlaid with coal, but soon took advantage of the vein and used it for fuel instead of wood for the locomotives. The railroad also took advantage of the sandstone quarry in the hills. The stone was not sold commercially until later, but the railroad mounted a crusher to grind the stone into sand for use in the sand domes of the engines. It was not especially good sand, for it could

not be ground fine enough, but it saved transporting carloads of sand from Pittsburgh.

The bluestone quarry located halfway up Laurel Ridge was being prepared, and the sawmill in Ligonier worked full time after the spring rains made logging possible in the hills. But a slump in construction and business hit the small mountain town from 1902 until 1905. It may have been the aftermath of the Spanish-American War, or it might have been a periodic regression, but, regardless of the cause, the effect slowed down the progress of the P. W. & S. Railroad.

Not until July, 1905, did any building receive public notice. Then two hundred men were pressed into construction work along the Somerset extension, and a second passenger coach was ordered in anticipation of the connection in Somerset. There is no explanation why the building was delayed for four years. The reader is left to conjecture what the reason was; lack of money, building difficulties, financial reasons, or a combination of all three.

Finally, in September, the P. W. & S. had broken out of the hills, and tracks and ties were laid as far as the Gasteiger cut on the roadbed of the old South Penn. This cut is well remembered by the men who worked on the road, for it was a "hand and horse cut" that was over ninety feet deep. The roadbed that was built on the grazing area is easily seen today. In several places Charlie Greico utilized the South Penn roadbed for the P. W. & S. This reduced the cost of construction materially, for grading was almost unnecessary.

A franchise to enter Somerset had been granted unanimously on July 21, 1905, and the people of the town were anxious to have the road completed. Less anxious, perhaps, was the Baltimore & Ohio R. R., which had the connecting line to Pittsburgh. The P. W. & S. would take away the valuable trade in shipping and in passengers, for the route was shorter by way of Ligonier to Pittsburgh than it was through the B. & O. system. There was no bitter rivalry between the roads, but there were disagreements. The *Echo* brought one of these arguments into print in October, 1905, when Editor Graham said, "The only opposition shown by the B. & O. people was when the P. W. & S. began the work of extending to Somerset and to utilize the bed of the South Penn. The B. & O. notices posted that the P. W. & S. should not use the South Penn route. These notices were ignored and no formal protest made. Further, the fact that the P. W. & S. is a feeder for the Pennsylvania, through the Ligonier Valley R. R. to Latrobe, and that the building of the road is encouraged by the Pennsylvania company, which controls the B. & O. company, is conclusive evidence that there will be no trouble in the completion of the P. W. & S. to Somerset in the near future."

This was not to be the last time the Pennsylvania would come to the aid of the P. W. & S., for, in April of 1906, the Western Maryland Railroad, Gould's coast-to-coast line, tried to buy up the small link of roadbed that ran over the hills. Then the P. R. R. stepped in. The *Echo* stated in part, "The Pennsylvania is making every effort to keep both the Ligonier Valley and the P. W. & S. out of the hands of the

Western Maryland, not that the Pennsylvania wants another line into that territory, but it does not want Gould to get a line in the Pennsylvania Railroad territory. Thus, it appears that Cassatt (President of the P. R. R.) and Gould have opened a new controversy and have clashed in another of the series of big and little battles that have beset Gould ever since he started to come east from Toledo."

But, amid the heat of August, the cool of September and October, and the frost of November the P. W. & S. inched toward Somerset. Work had been progressing at the Quemahoning tunnel, four miles from Somerset. This tunnel, which still stands and is only ten feet from the Pennsylvania Turnpike, was one of the masterpieces of construction on the South Penn. When it was abandoned, the 800-foot tunnel was left to fill with water and dirt. Greico and his Italians soon had it in condition by installing wooden beams measuring 24" x 24". It was approximately twenty-five feet high, and the roof or ceiling of the tunnel was supported with the heavy two-foot beams. Its shape was much like that of a house.

Even today the staunch ribs support tons of dirt, allowing only the clear, ice-cold water of the hill above to seep through. It is partially filled with the grading of the turnpike, and both entrance and exit are almost completely blocked. Ten feet of water cover the ties that are left, and daylight is an enemy to the cool, dark interior where the smoke-blackened supports slowly rot.

It received its name from the name of a creek in Somerset County, which was also the region where an old Indian village was located. The name is a corruption of the Indian euwei-mahoni, which means "pine tree lick", with the locative "ing" indicating a settlement or village was near the creek.

But the tunnel was a minor obstacle in the way of an advancing railroad, and it was completed in the fall, with only three miles to be built to Somerset. However, Somerset County winters are severe, and again the opening date was postponed until spring. Before the road was officially opened, Captain Byers, the general manager, was trying to arrange a through service from Latrobe to Somerset for the passengers that would be traveling from Pittsburgh to Somerset, but his attempts were forgotten in a final rush of construction.

It was April 28th, 1906, when the first shipment across the mountain to Ligonier was made. The cargo was not unusual nor was the trip, and the event was taken calmly, as evidenced by the small story appearing in the May 2nd issue of the *Echo*; "The first carload of freight was shipped from Somerset last Saturday, over the P. W. & S. Railroad, via Ligonier to Pittsburgh. It was a carload of flour and was taken right through without an accident. A considerable amount of freight has already been taken over this road which will soon be ready for regular passenger trains".

And it was not long until the first passenger train threaded its way up the hill toward Somerset. On May 26th, the train, with several log cars and two passenger coaches at the end, steamed out of Ligonier at 10:25 A. M., over the now-completed railroad. With a maximum of fif-



teen stops, it reached Somerset at noon with a rather anxious assemblage of passengers, including the managers of the road. This was to be so for the next ten years, for not even the engineers knew if the train would reach the top of the mountain.

### *Mechanical Developments*

And the railroad increased in stature and in favor with employee and passenger could well be the paraphrase used to describe the development of the P. W. & S. The stature was the progress made in equipment, and, with this modernization of equipment, the road increased in favor, not only to the residents of the valley, but to outside interests as well.

The Pennsylvania was one of the first moneyed groups to become interested in the road, when they leased rails to the P. W. & S. until the managers could purchase rails of their own. Likewise, the P. R. R. aided the new company by selling them their first engine.

Engineer T. I. Daniel, who brought the train in from Latrobe, in October, 1899, probably was unenthusiastic about the old six-driver engine, but "610", as it was known, served the P. W. & S. well for almost two years, until, the *Echo* noted, "The P. W. & S. railroad company have sold their engine and have bought a larger one for the increased business of the road." The new engine stayed with the road for a long time and doubled hauling passengers and freight. It was No. 76, a sixty-ton engine with eight drivers and a fantail boiler. The boiler was thought to be more efficient because it had more area to heat and could, therefore, generate steam more rapidly.

No. 76 received some small amount of acclaim, however, before it was reduced to secondary importance on the road. The *Echo* praised the tired engine with a story in March, 1900. The headline proclaimed, "A Famous Run", and the sub-head carried on the enthusiastic theme, "An Excellent Record for Fast Running." The story began thus: "Engineer Daniel, of the P. W. & S. Railroad made a famous run last Wednesday. With ten log cars and an anxious passenger, he came down from above Rector eight miles in 25 minutes. He got his passenger into Ligonier in time to catch the 4:40 (P.M.) for Latrobe."

Disregarding this tremendous speed of seventeen miles per hour, the P. W. & S. began purchasing other engines. No. 6 was bought but was soon sold. No. 1482 wasn't very good on the mountainous railroad, for the old employees recall that, "It wouldn't pull the hat off your head."

A road engine, No. 5, bought just before the P. W. & S. was completed to Somerset, proved to be a good buy. It weighed 35 tons and could haul eight or nine flat cars up over the mountain at a fairly fast rate. But the most famous engines of the road were the "Limas". The memory of these odd and powerful machines still lingers in the minds of the old engineers who drove them up and over the mountain.

The *Echo* formally welcomed their arrival with an interesting story in June, 1900. Under the simple caption, "New Engine", the notice read, "A new and peculiarly constructed engine called by the railroad people a 'stem winder' has been purchased by the P. W. & S. railroad. The



engine was made at Lima, Ohio, the only place where such an engine is manufactured. Engineer Duncan delivered it last week. It is to be used for the steep grades and crooked roads."

Other nicknames were applied to the unusual engines: names such as "Shay-gears" and "Limeys" were adopted by the crews who were quick to use the improvised railroad slang. There were only two Limas, No. 3, a 60-ton engine, and No. 295, which weighed 35 tons. (In many instances the shop or construction number of Shay Geared engines also served as its road number. If such was true in the case of No. 295, then this engine was originally built as #10, Ogden City Railway; Cylinders 9" x 8". Editor.)

They had three cylinders on the right side of the engine, which drove a crankshaft that was connected to every wheel of the engine. The crankshaft turned bevel gears that, in turn, propelled every wheel, including those under the tender. The crankshaft was encased in a steel pipe that was jointed near the tender, so the Lima could go around short curves. As it did, the shaft extended or shortened. With every wheel a driver, the tractive power was enormous, and the steepest grade could be pulled with ease. Occasionally the load would be too great and even the Limas would stall. In this event the rear car would be blocked by placing a log across the track, and the engine would drift back taking up the slack; then full throttle was applied and the train would race ahead perhaps twenty yards; then the rear car would be blocked again, and the process repeated.

Even the best of the engines would get off the track at least once a week. The reasons for this weekly occurrence were multiple. Track would spread or roadbed would wash away, and it was not odd to find a 60-ton engine straddling the rails halfway up the mountain. Heavy duty jacks and another engine were usually required to lift the helpless train back on the tracks again. But, if an engine broke down in the mountains, the engineer and his crew fixed it, they did not wait for a shop gang—they couldn't. The threat of being snowbound in the hills dissolved any labor feuds that dealt with "whose job was whose."

Safety devices were virtually unknown in 1900. Brakes were the old-fashioned "steam brakes", which just meant reversing the wheels. Rolling stock had hand brakes that were hand operated and each car had its own brakes. Unlike the modern engineer who can apply braking pressure simultaneously to all cars, the P. W. & S. engineer had to fight off a train that nudged the engine all the way down the mountain. Brakemen started tightening brakes while the logging train was still on Pine Flat, four miles above Rector.

By the time the fourteen-car train reached the gradual slope into Ligonier the brake shoes were cherry red. It is understandable, then, why the flat cars were run into the shop every other day to replace brake liners. The crude sand that was also used coming down the mountain aided the abrasion of the brake shoes.

The only other safety precaution was a series of "switchbacks", which were mile-long stretches of track that curved back into the level

parts of the mountain. These numerous switchbacks probably saved countless lives and thousands of dollars worth of freight.

As the train crept up the mountain, the flagman jumped down occasionally to throw a safety switch which would guide a runaway train into a switchback and slow it down. Coming down the mountain, the flagman walked ahead of the train and tripped the switches, permitting the train to continue down the 10 per cent grade.

Log cars were stripped-down gondolas, with removable slats on both sides of the cars, which usually held a dozen logs. These flat cars were hauled up the mountain to a timber tract and parked on a side track, where the log loader lifted 40-foot lengths of timber onto seven or eight cars in a train. Some log trains were longer, but only when the lumber mill was short of a stockpile.

By 1900, two boxcars were purchased to carry shipments of food to the mountain camps and bring down produce from the farms near Rector. The boxcars added to twenty-four flat cars made a total of twenty-six cars.

The railroad had a small repair shop adjoining the sawmill that handled minor repairs, but, for tire changes or boiler repairing, the engines had to be shipped to Latrobe or Altoona. The shop, however, could handle such emergency jobs as patching a cylinder or brazing a connecting rod.

The small tenders did not hold enough water to get over the mountain, and a water tower, usually called a water plug, was erected near the bluestone quarries. This was on the steepest part of the grade. To run out of water while trying to make the hill would have been very inconvenient.

All cars were equipped with the old link-and-pin couplers, a dangerous method of hitching cars together. The only place where they are used today is on street cars, and only on a few of those. Coupling or uncoupling a link-and-pin could be painful if not crippling, for in making the coupling the brakeman had to hold the link in position. Fingers were often badly pinched and not infrequently cut off by the impact of one coupler against the other.

Accidents were not the exception but the rule on the P. W. & S. At least three men were killed on the road, and several minor injuries were briefly mentioned in the *Echo*.  
\* \* \*

Matching the progress in mileage and mechanical improvements, the P. W. & S. had an excellent building program. At no time was the road very far ahead of the sources used to supply it with freight, i.e., the lumber camps always had a huge stockpile of lumber; the quarry usually had more stone than it could ship; and the buildings along the roadbed were adequate for the purpose they served.  
\* \* \*

Freight rates may have been low, but the shipper always sent a share of the shipment for the crew of the train, for he knew they would help themselves if he neglected to do so. Farmers, when shipping apples, in-

cluded a bushel for the men on the train, and the brewery shipping agent in Latrobe always sent an extra barrel to quench the thirst of the crew who hauled his barrels to Somerset. But the railroaders never forgot favors and would go out of their way to return one. To help farmers they would stop anywhere and pick them up, ignoring schedules and a cussing from Captain Byers. And the conductors served as shoppers for farmers too busy to make the trip to Somerset. They would do almost any amount of shopping for the farmers who always helped out when they were in trouble.

More than once the farmers came to the rescue of a snowbound train with shovels to help dig it out, and armloads of food for the hungry crew. When the situation was hopeless, the farmers would take the crew home for another meal and a good bed for the night.

Hard drinking seemed to go hand-in-hand with any mountain occupation. It was especially true as far as the railroad was concerned, for, as one of the crew members recalled, "You had to be drunk to come down off that mountain."

Working standards during the period were absurd by present day standards. The average working day, according to Harry Byers, totalled more than sixteen hours and was often twenty to twenty-two in the winter. This made a work-week of 100 hours based on a seven-day week; 100 hours of shoveling coal; 100 hours of throwing switches and uncoupling cars; 100 hours of laying ties and putting down rails, and the weekly wage was not \$100 as it would be now, but averaged something like \$18.

The highest paid employees on the road were the engineers who received 22½ cents per hour, or 25 cents an hour if they had been on the road for five years or more. Firemen, the hardest working of the whole crew, were given 16½ cents an hour, while brakemen received 18 cents for an hour's work. Conductors usually got 20 cents an hour, but even with \$20 a week, which was not a bad salary in 1900, the railroaders had little time to enjoy their homes or families.

On the railroad there was one difficulty—that of being paid. It was not unheard of for employees to go for three months without being paid.

\* \* \*

### *Financial Briefs*

The financial history of the line was probably very little different from that of hundreds of other small railroads of the period, i.e., operated and manipulated for the benefit of a few of its influential stockholders. It was initially capitalized at \$220,000, on June 24th, 1899. By 1905, authorized capital stock had increased to \$700,000. In 1908, the bonded debt was \$490,000, increasing to \$605,900 in 1916.

Its annual reports show an almost unbroken record of deficits. The most colossal fraud connected with the road occurred when the interest on \$490,000 in bonds came due each year. Instead of issuing dividend payments, the railroad handed out debenture bonds which increased the bonded indebtedness, but did not trouble anyone's conscience. There were four separate issues of these bonds in amounts of \$12,225 each.

New directors devised more schemes to avoid paying bondholders their rightful interest.

The real heyday of the railroad's finances was during the period from 1900 until 1909, when the mill was operating full time. The men who owned the railroad also owned the lumber mill, and they knew that they would only be taking money out of one pocket and putting it in another if they charged themselves for hauling lumber for the mill. So all hauling for the mill (and it totalled nearly 90% of operation) was eliminated from the books, so that stockholders did not receive the revenue for the millions of board feet of lumber hauled. It was a clever arrangement and probably made everyone in the top brackets very happy, but the poor fellow who owned fifty shares or less never heard about it, even though he may have suspected such collusion between the lumber company and the railroad.

The charter was sold to the P. C. C. & St. L. Railroad. Poor's Manual claims it was consolidation, but no train ever ran over the roadbed after September 20th, 1916. The land along the site of the winding track was sold for the most part to the state as a game preserve, and the remainder was bought up by the Mellon family.

### *Passenger Traffic*

In 1901, public demand forced the P. W. & S. to begin passenger operations, although the road seemed loathe to do so. Passengers had been carried previously, but only as a favor, for they did not pay fares. With the beginning of passenger service, which extended only as far as Bluestone, the popularity of excursions grew. The road was quick to seize this field, for the mountains provided a natural park for picnickers. The first excursion elicited a half-column in the June 19th, 1901, issue of the *Echo*. The headline, "First Excursion Over the P. W. & S. Railroad", was followed by the account beginning, "Last Thursday about forty people of the town composed the first picnic to the mountain over the P. W. & S. R. R. The party left in the morning about eight o'clock, going to the O'Brien Camp, five miles above Mechanicsburg (Rector) . . ."

A week after the article appeared, the road announced an excursion policy which would allow parties of ten or more to go on an excursion for only fifty cents apiece. Excursions and picnics were the mainstay of passenger operation for the first five years of the railroad's operation, for the progress in construction was hampered by a lack of funds. During this five-year period the railroad had been used principally to haul lumber down to the mill in Ligonier, so, when the mill was removed in the spring of 1906, the road could be profitably used to haul lumber for the Blair lumber camp, and passengers to and from Somerset. The route from Somerset to Pittsburgh was fifty miles shorter than any other route and had the added advantage that the commuter could leave for Pittsburgh in the morning and return the same evening, instead of remaining in Pittsburgh over night.

Even before the tracks were down all the way to Somerset, Capt. Byers was attempting to improve the passenger service. He proposed

through coach service via the P. R. R., to eliminate three changes of cars by passengers, but the Captain died before this improvement was made. On May 28th, 1906, passengers climbed aboard the two passenger cars, and, at 10:25 A.M., the train chugged out of Ligonier on the first passenger trip across the hill to Somerset.

Only three schedules were issued during the operating history of the road. The first schedule was released on June 10th, 1901, and included stops only as far as the Bluestone quarries. The remaining schedules were issued on May 28th, 1906, and August 11th, 1906. The final schedule remained in effect until December 1st, 1910, when Sunday trains were eliminated. Soon thereafter the schedule was cut to one trip a day.

The timetable offered when the extension to Somerset had been completed took into account connections with the Pennsylvania, in Pittsburgh, and with the Ligonier Valley, in Latrobe. After listing the road's officers, the schedule was shown, as follows:—

Leave			Arrive	
P.M.	A.M.		A.M.	P.M.
4:55	8:00	Pittsburgh P.R.R.	9:35	6:30
6:20	9:50	Latrobe L.V.R.R.	7:40	5:00
6:50	10:22	Ligonier L.V.R.R.	7:10	4:30
6:55	10:25	Ligonier	7:00	4:10
7:00	10:30	Market Street	6:55	4:05
7:05	10:35	Mellons Crossing	6:50	3:59
7:08	10:38	Speedwell	6:47	3:56
7:12	10:42	Byers	6:43	3:52
7:16	10:46	Rector	6:39	3:48
7:20	10:50	Grove Run	6:35	3:44
7:24	10:54	Bluestone	6:31	3:40
7:34	11:04	Water Station	6:28	3:37
7:49	11:19	Laurel Summit	6:13	3:17
7:56	11:26	Zufall	6:01	3:10
8:04	11:35	Gillette	5:52	3:01
8:07	11:39	Allenvale	5:48	2:56
8:21	11:53	Husband	5:33	2:38
8:25	12:00	Somerset	5:25	2:30

In reality, however, the schedule meant little, either to passenger or crew, because the equipment and roadbed was definitely unpredictable. The engine might suddenly straddle the track and not get back on until a crew from Ligonier arrived hours later.

The original timecard of May 28th, 1906, was changed the following August to include an additional train on Sundays. This change was made also to coincide with a passenger schedule of the Pennsylvania, changing the arrival time of their connecting train which ran from Latrobe to Pittsburgh. In this minor matter of five minutes, one can easily see how dependent smaller roads were upon the P. R. R. But it was a matter of conforming to the BIG schedule or losing passenger traffic to their rival, the B. & O., which also ran to Somerset.

Railroads in Pennsylvania were dealt a crushing blow in October, 1907, when state legislation was passed requiring all roads to charge only two cents per passenger mile. This meant that one could travel 100 miles for two dollars, and it also meant that every railroad would soon

drop passenger service unless the act was revoked. The act went into effect on October 1st. The act was fought, but only as high as the state Supreme Court and, in January, 1908, it was declared unconstitutional. It had lasted only three and a-half months.

George Burns related some of the more unpleasant tasks concerned with the passenger service. Rattlesnakes and copperheads were a constant danger in the spring and fall, while the snow in winter was enough to turn anyone's hair gray. Trains had to be run continually so that the tracks would be kept open; while falling trees, washouts and derailed cars kept men busy twenty-four hours a day at times.

Bobeats were also a menace, especially when a man was alone or had to walk for help. Conductor Burns wore a revolver at all times but never had to use it, even in the most violent fights. The mountains contributed quite a few hardships also. Rocks as large as porches frequently fell on tracks, or rock slides slowed the trains as much as twelve hours, while the four-man crew and all the passengers worked with picks and shovels to clear the tracks. During these long stretches the boiler frequently ran out of water, and snow had to be shoveled, or water carried to fill the tender.

Fighting forest fires along the right of way was one non-railroad activity to which the road and its employees gave unlimited cooperation, the railroad transporting fire fighters and their equipment to the exclusion of all other operations.

But the P. W. & S. was soon to lose some of its importance because of the advent of the "newfangled contraption" called the automobile. This personal conveyance deprived the railroad of passenger revenue, for, although riding the P. W. & S. was faster and more convenient, the automobile was a novelty and, as such, enjoyed immediate popularity. Perhaps it was the early Sunday driver which caused the road to discontinue Sunday trains in the fall of 1910, or perhaps it was just a lack of funds that made Lauros Allen withdraw his train. Excursions, of course, were excepted, and they continued to run up to Flat Rock, Mountain Home, or the various tourist camps that sprinkled the district above Rector. But excursions were few and revenue was decreasing.

There is little mention of the P. W. & S. in the Ligonier *Echo* for the six years from 1910 to 1916, except brief inserts about the arrival and departure of company officials. However, on March 29, 1916, a rather startling article appeared. Beneath the headline, "Passenger Train Not Running", the article read, "Since last Friday, the passenger train on the P. W. & S. R. R. has not been running between Ligonier and Somerset, and, owing to the condition of the roadbed, will not run again until further notice.

"It is stated that the freight traffic will be taken care of as heretofore. There has been considerable talk about the road changing hands and the putting on of a motor train which would improve passenger service considerable and would cost far less to operate. We hope some arrangement will be made to improve and continue the operation of the road."



Two weeks later the roadbed was repaired and the P. W. & S. began passenger service once again. The reduced schedule of only two trains a day was still a great convenience for Somerset-Pittsburg commuters, and the daily trains still met incoming and outgoing L. V. R. R. trains. But this reprieve was not to last more than five months for, on September 23rd, all passenger and freight operations were discontinued. The *Echo* was hopeful, but stated in part, "The reason for suspension of the service on the road has not been stated. The closing down of the passenger service will be a considerable disadvantage to people who have been accustomed to travel this road and they will have to seek another route by auto, either from Ligonier or Johnstown, which is far from convenient. We hope to see the service resumed in the near future."

In spite of Editor Graham's hoping, the railroad never resumed service, and only a last flicker of resurrection was visible in 1917, when an article was reprinted from the *Somerset Standard* in August. The headline looked like the ones he had set eighteen years before, when the railroad was a new and promising venture.

### *Why the Road Failed*

Like an ex-champion, the P. W. & S. flinched as Fate, the referee, had counted out her ten strokes. The railroad knew that, as each number sounded, it could never rise again. The numbers that were counted amounted to ten reasons why the road could no longer exist.

One! The lumber mill had been torn down in 1900, and the profits which the officers had garnered had to be poured back into the road to keep it operating. This they would never do.

Two! Blairs' camp, which had a mill and had been shipping in both directions from their camp at the top of the mountain, was not shipping enough lumber to make the freight business profitable.

Three! The blue rock quarries on the right of Linn Run were abandoned because of financial difficulties, and the few mines which were sunk back into the hills had stopped producing more than a few carloads of coal a week.

Four! There was a gradual decrease in freight and passenger earnings. After 1912 there was an average yearly decrease in freight revenues of \$2,482, and, in the same period, passenger revenues decreased an average of \$1,603 per year until the railroad closed down in 1916.

Five! Cars were in bad condition, engines were in disrepair, shops were inadequately equipped to deal with major repairs, and the company could not afford to shop all the cars. Service was not even comparable to that of major railroads, such as the Pennsylvania. Kerosene lanterns were still used to light the wicker-chaired coaches, while the P. R. R. had advanced from gas to the new electric lights and plush seats.

Six! With reduced schedules, which had been put in effect after 1915, the railroad was no longer the convenience it had once been. With only two trains a day it was only collecting half the revenues that it had collected from 1906 until 1914.

Seven! Track wears out, rails need replacing, and ballast must be cleaned and repacked. In short, the roadbed was bad and it was unable to support the traffic it had borne before. The brief repair work that had been done in 1916 was only to recondition the worst section of track.

Eight! A ruling of the Public Service Commission required all railroads to change couplers on their cars. This meant that the old link-and-pin couplers could no longer be used and, if a railroad wanted to stay in operation, it had to abide by the ruling and change to the knuckle type used today. Completely changing couplers on thirty cars and two engines meant additional thousands of dollars, that the directors did not want to spend.

Nine! Debt had mounted until the company had to go into bankruptcy or quit, or both. Beside the sixty-odd thousand dollars owed to the P. R. R., the P. W. & S. had to pay off bonds and interest on stock, for the stockholders were wondering about the debenture system when they kept receiving more stock instead of money. Fortunately, the total assets were more than sufficient to pay off the bonds and some dividends, too. Poor's Manual for 1916 reports that the total assets were \$1,402,482, with a property investment of \$1,082,105.

Ten! With the arrival of the Glidden Tours and the development of the automobile, passenger traffic on railroads was seriously affected. Freight became the mainstay of the railroad, but the P. W. & S. just did not have the freight to haul. So the champion's title was bought by a separate railroad concern in 1917, when the Pittsburgh, Cincinnati, Chicago & St. Louis purchased the charter in January of that year, and the P. W. & S. remained only as a scar on the wooded hills and a memory in the minds of Ligonier people. A memory that is good only in retrospect.

\* \* \*

### *A Summary and Evaluation*

In less than two decades the railroad had reached the position of the most important business in Ligonier and had faded to the extent that it was taken for granted after the lumber mill closed down. But it had given employment to hundreds of people in the Ligonier Valley, directly or indirectly. It had carried countless thousands of passengers over the 26-mile stretch of track and had provided million of board feet of lumber to western Pennsylvania.

It provided the only boom Ligonier had ever known and, like all booms it finally burst. But, in its collapse, the P. W. & S. left its mark on the area. It had popularized a business which would become the chief concern of Ligonier—that of being a tourist area. With the excursions it had run to the mountain, the railroad also gave the area above Rector a certain degree of popularity, as the numerous summer homes and cabins there now will testify.

Although it had drained the forests of prime stands of timber, and had fleeced stockholders, it was not alone in either of these ventures.

Along the deserted and overhung roadbed there are few reminders that a mountain railroad had ever trespassed on the rocky path through



the forest. The only evidence visible are a few rusty spikes and piles of rotted ties beneath the underbrush that borders the old roadbed. But now the roadbed is a road used to carry immense loads of traffic into and out of Forbes State Forest, a popular, year-round vacation area. And beyond the forest boundaries toward Somerset is one of the state's most modern ski resorts. Located on the Blair's Camp spur, Laurel Slopes consists of a large ski lodge, and the weekend skiers speed down steep grades where loggers once felled immense trees.

Coming out of the forest near Allenvale, one can see the Pennsylvania Turnpike in the distance. So even the end result is a pleasing one, and the P. W. & S. did serve an important purpose, even though it operated only sixteen years and a few months.

Those years have reached into the present to affect the lives of millions of people who pass through Ligonier or travel over the turnpike. So the people who had lifted their eyes to the hills in 1899 had not looked in vain, for their strength had been returned a thousand-fold.

# The Cincinnati, Hamilton & Dayton R. R.

By CHARLES E. FISHER

Chartered March 2nd, 1846 as the Cincinnati & Hamilton R. R., this 4'10" gauge railroad adopted its full title on February 8th, 1847 and was completed to Dayton, a distance of 59 miles on September 20th, 1851. The road emerged from the west side of Cincinnati and followed the valleys of Mill creek and the Big Miami River. In July, 1848, S. S. L'Hommedieu, publisher of the "Cincinnati Gazette" and a strong minded Huguenot, accepted the presidency and he led the destinies of this railroad for twenty years in a most successful manner.

The road served as a bridge route for half a dozen railroads extending from Lake Erie southwards and roads to the westward that wanted a connection to Cincinnati. On May 6, 1863, the C. H. & D. leased the Dayton & Michigan R. R. thus securing an entrance to Toledo, Ohio. In 1865, the road agreed to lay a pair of rails, 6'0" gauge between Dayton and Cincinnati to permit the use of the cars of the Atlantic & Great Western and thus connect with the Ohio & Mississippi for St. Louis. In November, 1872 the road purchased control of the Cincinnati, Hamilton & Indianapolis R. R. At the time the Dayton & Michigan was acquired, control was also secured of the Cincinnati, Richmond & Chicago R. R. In April, 1882, control of the C. H. & D. was acquired by the New York, Lake Erie & Western R. R., by the purchase of 20,000 shares—the latter company guaranteeing an annual dividend of 6% on the stock. In 1886 this agreement was annulled. On May 1st, 1891, the road secured control of the Cincinnati, Dayton & Ironton and the Cincinnati, Dayton & Chicago roads. The owned and leased lines of railroad totalled 651 miles.

An "Official Guide" for May, 1892 lists three trains each way daily between Cincinnati, Toledo and Detroit with an additional one for Toledo. Also three additional trains carry through coaches and sleeping cars from Cincinnati to New York via the New York, Lake Erie & Western R. R. The "Velvet Train" left Cincinnati at 8:05 A.M., due Indianapolis at 11:25 A.M. and proceeded to Chicago via the Monon arriving there at 5:20 P.M. This was a through vestibuled train of coaches, parlor cars and dining car with a parlor car to St. Louis via the Vandalia arriving at 7:00 P.M. "The Electric" left Cincinnati at 9:00 P.M. with through coaches, compartment smoking cars and sleeping cars for Chicago arriving at 7:35 A.M. "Lighted by electricity and gas and heated by steam throughout." The train leaving Cincinnati at 7:15 P.M. carried through equipment for St. Louis via the Vandalia and a through "sleeper" for Keokuk, Iowa via the I. D. & W. and Wabash Rys. There were two additional trains to Indianapolis and a corresponding movement eastbound.

For a short time the road was under the control of a group of financiers that consolidated it with the Pere Marquette but when the road emerged from receivership on August 20th, 1909 and large stock interest was acquired by the Baltimore & Ohio R. R. and it is still a part of that

system tho' it was shorn of many of its controlled lines as the result of the receivership.

Turning to the locomotives owned by this road, the Annual Reports faithfully list them until 1861. In addition to those from the Taunton, Hinkley and Rogers Works, we find that the builders in Cincinnati were patronized, over half being built in that city. If the names and dates are correct, these reports should give us some idea as to the changes from Harkness & Son to Harkness, Moore & Co. These builders in Cincinnati, together with Taunton and Rogers furnished most of the locomotives through the Civil War.

From 1870 up to 1910, the C. H. & D. purchased its locomotives from seven different builders. Between 1870 and 1876, the Baldwin Works furnished eight 16x24" 60" 4-4-0 locomotives together with one four wheeled and one six wheeled switcher. The first engine delivered by the Brooks Works was the #12, 0-6-0 type in 1885, 17x24" 48". This was followed by a group of moguls in 1887, Nos. 41-45, 18x24" 57" and three more six wheeled switchers, Nos. 215-217, similar to the #12, in 1887. In 1891, three more six wheeled switchers, Nos. 73-75 and six more moguls, Nos. 263-268 were delivered, similar to the others already delivered but, these were the first engines built at Brooks with the Belpaire boiler. In 1892, Nos. 76-79, 0-6-0 type similar to the others were delivered. Brooks #2265, C. H. & D. #210 was one of the nine engines this builder had on exhibition at the Chicago Fair in 1893. The engine had 18x26" cylinders and 73" drivers, was beautifully finished and decorated as shown in the accompanying illustration. Note the electric generator behind the stack. The last group from the Brooks Works were a group of ten wheelers in 1893, Nos. 325-330 with 18x24" cylinders and 56" drivers.

During this period the Rhode Island Works delivered in 1887, four 19x24" cyl. 52" moguls road numbers 46-50 and two six wheeled switchers, Nos. 218-219, 17x24" cylinders 50" drivers. C. H. & D. Nos. 220-221, 0-6-0, 17x24" cylinders came from the New York L. W., Rome, N. Y. in 1890. The Schenectady L. W. delivered six locomotives of the 4-4-0 type, road Nos. 125-127 and 130-132, 18x24" 64" engines together with road Nos. 208-209, 4-4-0, 18x24" 69" and Nos. 300-301, 4-6-0, 18x24" 64" engines.

Pittsburgh was the next builder. In 1892 that firm furnished eight "ten-wheelers", road Nos. 304-311, 18x24" 56" drivers. Nos. 312-318 were delivered in 1893 similar to the first order. Nos. 319-324 followed in November and December of 1893. Three six wheeled switchers, Nos. 32-84 were delivered in 1894, 18x24" 50" to be followed by road Nos. 85-87 in 1897. Three more "ten-wheelers", Nos. 331-333 came in 1895 with 18x24" cylinders and 63" drivers. In 1899 these were followed by road Nos. 334-336, 88-90, six wheel switchers, 18x24" 51" and road Nos. 211-212, 4-4-0 type, 18x26" 69" drivers. Nos. 337-338, 4-6-0 type were added to the roster in 1900, 18x24" 57" drivers, road Nos. 91-92, six wheel switchers came later in the year and, in 1902, road Nos. 360-364, 4-6-0 type, 19x26" 57" were the last that came from the Pittsburgh Works.

In 1904, the Baldwin Works delivered nine locomotives of the 4-6-0 type, road Nos. 344-352, 19x26" cylinders, 69" drivers. These were con-

siderably larger than any type of passenger engine owned by the road and they were used on the heaviest trains. Fifteen consolidations, 2-8-0 type, were delivered from this builder in 1905 with  $19\frac{1}{2}$ x28" cylinders and 57" drivers. These were assigned road Nos. 420-434 incl.

Commencing in 1902, the Pittsburgh plant of the American Locomotive Co., delivered eight more locomotives of the 4-6-0 type with 19x26" cylinders, 57" drivers and a weight of 135000 lbs. These carried road Nos. 365-372 and they were followed later in the year by Nos. 339-340, 4-6-0, 18x26" 69" wt. 135000 lbs. from the Pittsburgh Works. In 1903, road Nos. 373-382, similar to the first order were delivered from these same works. Later in the year, road Nos. 341-343 and 383-387 were also delivered, similar to the others save the first group weighed 147000 lbs. In 1905 the Brooks plant furnished road Nos. 404-419, 2-8-0 type,  $19\frac{1}{2}$ x28" 57" 179000 lbs. and the Schenectady plant furnished road Nos. 96-99, six wheeled switchers, 19x26" 51" 132000 lbs. In 1909, the Schenectady plant built road Nos. 28-37, 0-6-0 type similar to the others. In 1910 the Brooks plant completed construction of road Nos. 601-620, 2-8-0 type, 22x30" 61" 216000 and from the Schenectady plant came road Nos. 501-505, Pacific type, 22x26" 77" and a weight of 214000 lbs. These were used on the night train between Toledo and Cincinnati and, in my opinion, they were a very handsome locomotive.

This author frankly admits that the years he was at Ann Arbor and could visit Toledo from 1910-1913, locomotives lettered "C. H. & D." were not common at the northern end at any rate. The builder's records do not always disclose any additional features in the various orders but, it does seem that the road kept pace both in the matter of type and size. In 1917, all of the C. H. & D. locomotives were renumbered into the Baltimore & Ohio series and the tenders and rolling stock lettered accordingly. It is the hope that this brief account, together with the illustrations, will be of interest to our membership and, let me add, photographs of locomotives of this road are not common.

## Worth Reading

compiled by

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### BOOKS AND PAMPHLETS

*American Railroad Collections and Memorabilia*, by Carlton J. Corliss. Talk before National Trust for Historic Preservation, Washington, D. C., Oct. 20, 1956. 17 mimeo. 1. Free on request to A A R Public Relations Dept., Transportation Bldg., Washington 6, D. C. "The 'Museum of American Railway History' extends from the University of Maine on the east to Leland Stanford University on the west, from St. Paul and Seattle on the north to Tucson and St. Augustine on the south..." "Historical Locomotives" pp. 2-10.

*The American Railroad Network 1861-1890*, by George Rogers Taylor and Irene D. Neu. viii [4], 113 p. Folded Maps: U.S. and Canadian Rys., April 1, 1861. Pt. I: Canada, New England, and the Middle Atlantic States; II. Canada and Midwestern States; III. Southern States. Cambridge, Mass., Harvard Univ. Press. \$3.75. LC ed. no. 56-8554.

*Analysis of Competitive Relations between Railway Operation Systems—General Principles and Their Application to Electric and Diesel-Electric Traction*, by Th. Thelander. 51 p., Illus. Dated Dec. 1, 1956. Free on request to Kungl. Järnvägsstyrelsen. Elektrotekniska Byren, Vasagatan 1, Stockholm, Sweden.

*Association of American Railroads Research Center. Research Activities 1956.* cover-title, 44 p. Illus. Its 5th Annual Report on Mechanical including "Stresses in Diesel Locomotive Wheels"; Container and Loading; Engineering; and Sanitation Research. Free on request to Center, in Technology Center, Illinois Institute of Technology, Chicago 16, Illinois.

*A Century of Locomotives—New South Wales Railways 1855-1955*, compiled by The Australian Railway Historical Society. 128 p. Illus. Sydney, New South Wales, Department of Railways. Price not given.

*The Combination Vehicle for Coordinated Rail and Highway Service*, by K. A. Browne and G. J. Sennhauser, C & O Ry. cover-title, 22 proc. 1. Illus. Contributed by Railway Division to American Society of Mechanical Engineers annual meeting, Nov. 26-30, 1956. "... The basic concept of such vehicles is quite old as revealed by a study of the patent art, ... In 1952, management of the Chesapeake and Ohio Railway authorized the engineering development herein called the Railvan as a promising new tool for the land transportation of merchandise. ..."

*Diesel Rail Traction in comparison with Steam Traction and Electric Traction—Report of the Arbeitsgemeinschaft Dieselschienenverkehr.* ix, 164 p. Darmstadt, Germany, Carl Röhrig Verlag. Price not given.

*Direct Fired Coal Burning Gas Turbine Operations*, by Peter R. Broadley and William M. Meyer. 6 p. Illus., Diags., Graphs. Presented

Nov. 22, 1956 to Conference on Coal Burning Turbines, McGill Univ., Montreal. Dunkirk, N. Y., Bituminous Coal Research, Inc. Locomotive Development Committee. Price not given.

*Directory of Railway Officials & Year Book 1956-1957*, compiled from Official Sources under the direction of the Editor of *The Railway Gazette*. ii, 526 p. London, England, Tothill Press Ltd.—62nd year of publication. 40 Shillings. "Among many changes in this year's edition, the outstanding alteration is the arrangement of all countries of the world (other than Great Britain and Ireland) in alphabetical order, irrespective of their geographical or political grouping. . . .

*The Economy of the Florida East Coast—A 15 Year Forecast*. A Report to St. Joe Paper Co. by Arthur D. Little, Inc., July 18, 1956. iv, 105 p. *Transportation. Railroads* pp. 42-47. Washington 6, D.C., Arthur D. Little, Inc. Price not given.

*Electronics—The New Dimension in Railroad*, by Joseph A. Fisher, president, The Reading Railroad. 8 p. Reprinted from Delaware Valley Announcer, Nov. 1956. "... The story of application of electronics to railroading starts back more than 50 years ago. . . ." Free on request to Director of Public Relations, Reading Co., Reading Terminal, Philadelphia 7, Pa.

*Food Transportation and What It Costs Us*, by Marketing Research Division, Agricultural Marketing Service, U. S. Dept. of Agriculture. Its Miscellaneous Publication No. 738, Nov. 1956. 23 p. Illus. For sale by Supt. of Documents, U. S. Govt. Print. Off., Washington 25, D. C. 15 cents.

*Freight Car Distribution and Car Handling in the United States*, by E. W. Coughlin, manager, Railroad Relations, Car Service Division. vii [4], 338 p. Washington 6, D. C., A A R Car Service Div. \$2.40. First book ever published on use and efficient handling of freight cars, which account for over  $\frac{1}{5}$ ths of railroad revenues and represent about  $\frac{1}{6}$  of railroad total investment in equipment. Ed. summary: *Freight Wagon Control on U. S. A. Railways* in *The Railway Gazette*, London, England, December 7, 1956, pp. 661-662.

*The Handbook of American Railroads*, by Robert G. Lewis. *Second edition* 1956. xii, 251 p. Illus., Maps, and reproductions of Insignia. New York, Simmons-Boardman Publishing Corporation. \$3.95.

*Henry Varnum Poor—Business Editor, Analyst, and Reformer*, by Alfred D. Chandler, Jr. 362 p. Illus., Ports. Cambridge, Mass., Harvard University Press. \$6.50. LC ed. no. 56-11260. "... As editor of the *American Railroad Journal* in the twelve years before the Civil War and of the *Manual of the Railroads of the United States* in the postwar years, Poor pioneered in the systematic collection, compilation, and dissemination of business administration . . . Because he penned analyses and proposed reforms during the first great expansion of the American railroad network, Poor was one of the first Americans to examine intensively the problems raised by the coming of modern big business. A study of Poor's career . . ., therefore, tells something about the impact of the railroad revolution in the mid-nineteenth century on the American economy and



Grigg's Collection

C. H. & D. #126. Schenectady, 1890



R. & L. H. S. Collection

C. H. & D. #210. Brooks #2265, 1893

One of the nine engines exhibited at the Chicago World's Fair that year by the builder



Grigg's Collection

C. H. & D. #340. Pittsburgh, 1902



Grigg's Collection

C. H. & D. #210. Brooks, 1893. A service view of the #210



Loomis Collection

C. H. & D. #350 at Detroit, Mich., 1909. Baldwin, 1901



C. H. & D. #502 at Toledo, Ohio, 1912. Schenectady, 1910



on American business organization. It also includes much about the development in the United States of the systematic provision of reliable business information. . . ."

*Management Controls of Transportation Operations*—papers and panel discussion at Railway Systems and Procedures Association 1956 Fall Meeting, Chicago, Ill., October 9-11, 1956, published as its Proceedings in Nov. 1956. 128 p. Washington 2, D. C., 357 Union Station. \$5.00. The 16 papers include: *What Management Needs in the Way of Information to Control Transportation Operations*, by Ben W. Heineman, chmn., C & N W System, pp. 1-4, and *What Next?* by John W. Barriger, president, The Pittsburgh & Lake Erie Railroad Co., pp. 73-82, which lists what a P&LE vice president in charge of "What shall we do tomorrow?"—if it had one—would be instructed to examine and develop.

*Moody's Transportation Manual—Railroads—Airlines—Shipping—Traction, Bus and Truck Lines—American and Foreign—1956*. John Sherman Porter, editor-in-chief. D. B. McCruden, publisher. xxxvii, 1516 p., with Special Features Section, pp. al - a-116, inserted bet. pp. 1624 and 1625. [List of Transportation Maps], p. ii. New York 7, N. Y., Moody's Investors Service, 99 Church Street. \$69.00. ". . . The Manual covers over 1,000 railroads with full coverage on other transportation enterprises in which there is public investment interest. . . ."

*Operation of Diesel Locomotives with Dual Fuel Systems*, by Paul V. Garin, Southern Pacific Co. vi, 137 proc. 1. Illus. San Francisco 5, Calif., Southern Pacific Co. Prepared for American Society for Testing Materials 2nd Pacific area national meeting, Los Angeles, Calif., Sept. 18, 1956.

*Origen de los Ferrocarriles Españoles (Comienzo de su Historia)*, 1829-1855, by Francisco Wais. 280 p. Illus. Madrid, Spain, Talleres Graficos "Marsiega", 18 pesetas.

*Overseas Railways 1956—A Railway Gazette Publication*. 229 p. Maps. Illus., part in color. London, Eng., The Railway Gazette, 33 Tottenham St., S.W.1. 7 shillings 6 pence. Described by their respective general managers, or other officers, are the following railroads in Africa: Benguela; East Africa; Gold Coast; Nigerian; Nyasaland & Trans-Zambesia; Rhodesia; South African and Sudan—Australia: Commonwealth; New South Wales; South Australian; Victorian, Tasmanian and Western Australian—Far East: Burma; Ceylon; India Central, Southern, South Eastern and Western; Malayan; Pakistan Eastern Bengal and North Western; Thailand—Near East: Iraqi—New Zealand Government; North America: Canadian National and Canadian Pacific—South America: Antofagasta (Chili) & Bolivia; Argentina—Brazilian; British Guian; Costa Rican—West Indies: Jamaican.

*A Progress Report On . . . Development of an Atomic-Powered Locomotive*, by B. C. Gunnell, president, Bush Hill Development Corporation, Alexandria, Va. 6 proc. 1. 50 cents. To ASME members, 25 cents. Contributed by Railroad Division, American Society of Mechanical Engineers to ASME annual meeting, New York, Nov. 25-30, 1956. Will be printed in ASME proceedings 1956, with written discussions. Summary in Railway Age, Dec. 10, 1956, p. 12. ". . . At present it is questionable whether an

atomic-powered locomotive can justify its existence on American commercial railroads, but it does appear that such a locomotive has a place in our military service, as well as in certain foreign countries where present-day type fuels are in short supply. . . ."

*Pullman-Standard's Train X*, by Thomas C. Gray. cover-title, 26 p. Illus. and Diagr. Chicago, Ill., Pullman-Standard Car Mfg. Co. Presented before American Society of Mechanical Engineers Diamond Jubilee Annual Meeting, Chicago, Nov. 13-18, 1955. ". . . Briefly, Train X may be described as a bidirectional low contour, low center of gravity, inherent self-banking design, which permits train trailing weights of approximately one-third that of the conventional and utilizes much less and lower cost equipment. . . ."

*The Railroad Station—An Architectural History*, by Carroll L. V. Meeks. xxvi, 203 p. Illus. Diagr. New Haven, Conn., Yale University Press. \$7.50. "Bibliographical Essay" pp. 175-186.

*Railways and Geography*, by Andrew C. O'Dell, professor of geography, University of Aberdeen, Scotland. 200 p. Maps. Bibliography. London, W.1, England, Hutchinson & Co. 10 shillings, 6 pence. ". . . This volume is an endeavor . . . to portray, . . . the geographical factors which have influenced in different places, at different times, the construction and operation of railways."

*Railways of the West Midlands—A Chronology 1808-1954*. 64 p., Illus., Sketch Map, folded. London, England, The Stephenson Locomotive Society, 32 Russell Road. 7 shillings 6 pence.

*Redwood Railways—A Story of Redwoods, Picnics and Commuters*, by Gilbert H. Kneiss. Foreword by Lucius Beebe. xviii, 165 p. Maps, including front end-papers, and folded maps inside back cover. Illus., Facsim. Berkeley, Calif., Howell-North. \$4.75. *Roster: The Locomotives of the Northwestern Pacific and Predecessor Lines*, pp. 139-146.

*Super-Railroads for a Dynamic American Economy*, by John Walker Barriger. xi, 91 p., charts, tables. New York 7, N. Y., Simmons-Boardman Publishing Corporation. \$2.00. ". . . The basic elements of the railroad problem—physical, financial, and managerial—which will control the ability of the railroads to modernize plant and service are treated in this study. . . . The opinions expressed herein are solely those of the author, personally. . . ."

*A Ten-Year Projection of Railroad Growth Potential*, by Transportation Facts, Inc. 98 p. Chicago 3, Ill., Railway Progress Institute. "Let's Look Ahead and Stay Ahead" by the Institute, attached. 4 p. "Effects of Certain New Transport Developments"—Helicopters, Coal Pipelines, St. Lawrence Seaway, and New Highway Program" p. 89. For copies and price, write the Institute.

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reproductions of paintings by modern Spanish painters and illustrators in color. "Nueva York-San Francisco tren ultrarrápido" by Rafael Duyos included. unpagged. Madrid, Spain, Red Nacional de los Ferrocarriles Españoles, Santa Isabel 44. Price not given.

*What's New In Transportation? A Look at U. S. Army's Containerization and Palletization Program—"Piggyback"—Trailer-on-Flat-Car—"Fishyback"—The Increasing Use of Trailerships—"Birdieback"—Pioneering in Air Freight*, by Gen. E. C. R. Lasher and others. 22 p. Illus. Washington 5, D. C., Truck-Trailer Manufacturers Association. 50 cents.

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*Atomic Energy and Propulsion*, by Sir John Cockcroft. The Journal of the Institute of Transport, London, Eng., September 1956, pp. 421-429. Illus., Diagsr.

*Automation and the Railroads*, by Sydney A. Levy. Railway Progress, November 1956, pp. 16-23. Illus.

*The Deep North, U. S. A.—A Portfolio of Photographs* [some in color], by Erich Hartmann. Fortune, January 1957, pp. 109-120 and front cover. Includes winter service pictures on Bangor & Aroostook, and Northern Pacific, of rail yards at ore docks, Two Harbors, Minn., and an ore train at Virginia, Minn., as well as an ice-coated freight car at Green Bay, Wisconsin.

*Développement de la Traction Électrique en Italie*, by A. Begue. La Vie du Rail—Notre Métier, Paris, France, No. 575, Noël 1956—Spécial, pp. 31-34. Illustrated in color.

*Eight-Wheelers*, by H. L. Kelso. Railroad Magazine, February 1957, pp. 18-27. Illus. "They turned busy canals into dry ditches, helped to win the Civil War, opened the door to the western plains, and put thousands of stagecoach horses out to pasture . . . The Eight-wheeler . . . was the first thing on wheels to exceed 100 miles per hour and she served as a guinea pig for the first Compound locomotive, the Westinghouse airbrake, and the Belpaire boiler. . . ."

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*Exploring the X-Plorer*, by Clyde Carley. Railway Progress, December 1956, pp. 4-10. Illus. ". . . My introduction to the Central's new lowslung, lightweight, which traverses the state of Ohio daily between Cleveland and Cincinnati, was gentle and unexpected. . . ."

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*Medal of Honor—Sixty-nine heroes hold railroading's highest award for bravery*, by James N. Sites. Railway Progress, November 1956, pp. 32-37. Illus. "... Four of those honored were women. . . ."

*Old Photographs in the Public Domain*, by Josephine Cobb, chief, Still Picture Section, National Archives. Special Libraries, December 1956, pp. 448-451. Illus. "... which have survived the years and are preserved in libraries, archives and museums or appear as illustrations in old books. . . . Any of these older photographs, copyrighted and published prior to January 1, 1900, are now in the public domain. . . . the copyrights . . . have now expired. . . ."

*Operations Research Applied to Railroading*, by B. E. Wynn, controller, Western Maryland Ry. Co. New York Railroad Club. Official Proceedings, October 18, 1956, pp. 170-178. "... My own railroad, this year began an Operations Research inquiry into traffic bottlenecks. . . ." (pp. 177-178)

*Our New Drapery Fabric: Its Off to a Running Start!* Baltimore & Ohio Magazine, December 1956, pp. 4-7. Illus. "Making its bow to the public in department stores and decorators' shops across the nation on October 30, our new B&O drapery fabric seems well on its way to being a hit of some proportions. The historic print, depicting famous locomotives and cars in the B&O's Transportation Museum . . . F. Schumacher and Company, the manufacturer. . . ."

*Pennsylvania's First Railroad at Leiperville Officially Abolished by PUC—Old Bridge Makes Way for Road—Old RR Roadbed to be Covered.* Chester, Penna. Times, August 29, 1956, p. 15. Illus.

*Perspectives d'avenir—électrification—signalisation—modernisation des grands triages—voies en barres longues soudées . . . à fin de 1956—grandes relations par rames automotrices diesel—zones de traction diesel.* La Vie du Rail—Notre Métier, Paris, France. No. 575, "Noël 1956"—

Spécial, pp. 3-11. Maps and Illus. An Interview of Charles Boyaux, director general, French National Railroads, by Mlle. Christiane Caron. Price of special issue: 100 francs.

*Piccadilly Line Is Fifty*—London Transport Magazine, December 1956, pp. 4-5. Port. of Charles Day, now 76, whose control key used at opening ceremony, when the official gold key did not fit ceremonial train, p. 5. "How the Line Grew" into London's longest tube—chronological table, p. 4.

*Piccadilly Line Jubilee*. The Railway Gazette, London, England, December 14, 1956, pp. 689-690. Opened Dec. 15, 1906, four years after American financier Charles Tyson Yerkes and his group won "what was probably the last major Parliamentary battle of its kind" from another American financial group led by J. Pierpont Morgan.

*Preservation and Restoration of Library Materials*, by Margaret Scriven, librarian, Chicago Historical Society. Special Libraries, December 1956, pp. 439-448. "... It may seem, when I mention \$30 for a protective case, that I am wandering away from what may be called practical preservation and restoration of library materials, but it has been our experience that many companies have paid over and over not only for laxity in preserving what they have, but in keeping something to preserve.

Many organizations have literally destroyed their own histories and realized it only when an anniversary was in sight. . . . Here is one example of such carelessness . . . [\$300 for three posters issued 30 years before but found only in a Chicago book dealer's store] Does \$4 seem high for a protective cover, or on occasion, \$30? Does it seem like too much trouble to clean a charter and store it carefully? . . ."

*Proper Protection is the Key to Successful Exhibition of Locomotives In Parks*, by Jean Jamison Boettiger. Park Maintenance, October 1956, pp. 8-10, 12. Illus.

*Railroad Management Looks Ahead—1957: A High Green to a Bigger Future—Improvements, Goals, Challenges*. Modern Railroads, January 1957. 206 p. Illus. "Forward Steps Taken in 1956" pp. 79-80. "Congress: Again Inertia—Railroad efforts continue to be directed toward tax relief, the Cabinet reports" by Harry L. Tennant, p. 83. "GE's analysts project railroad growth—a 43% greater future by 1965" by K. R. Ross, pp. 87-90. Charts. "Railroad Improvements 1956 . . . Plans for 1957. A special report—by railroads— . . ." pp. 95-170. Illus. "In 1957 . . . how close to the railroad of the future?" pp. 173-176. "Report from Europe" by Robert Spark.—radio-operated crewless switcher—more auto piggybacks—new low slung piggyback cars—welded rail, concrete ties, p. 181. Illus.

*Railroad Mergers—They Promise New Economies for the Carriers*, by Arthur Jansen. Barron's, December 17, 1956, pp. 11, 13, 15. "Since dieselization is so well advanced that further big savings from this source are unlikely, more and more railroad executives seem to believe that mergers and consolidations offer the most promising area for large new economies . . ."

*Railroads—Laggards of Industry, good times last year only brought the nation's railroads more woes—and few solutions.* Forbes—Business and Finance, January 1, 1957, pp. 93-98. Illus.

*Railway Age 1956 Review and 1957 Outlook*, January 14, 1957, issue. 180 p., Illus. Charts. \$1.00. Contents include: *Better Freight Cars—Not Enough*, by C. B. Peck, pp. 78-79; *Communications 1956-1957*, by Robert W. McKnight, pp. 80-81; *Here's What Railroads Will Spend in 1957 . . . for Upgrading Their Properties*, by J. W. Milliken, pp. 72-74, 172-173; *How to get More Net: 1* [by Railway Age]; *2* [by 10 RR presidents]; *3* [by Brotherhood leaders]; *4* [by 5 financial analysts] pp. 9-11, 123-124. *Legislative Program Must Be Sold*, by Walter J. Taft, pp. 75-76. *1957 Buying—Over \$4 Billion?* by J. W. Milliken, p. 77. *More Automation in 1957 Signaling*, pp. 88-89. *Passenger Service in 1957 . . . Milestone or Millstone?* by F. N. Houser, Jr., pp. 90-92. *Patterns Changing in M/W Field—More Work—More Machines—New Practices*, pp. 82-84. *Railroads Search for Economies in Motive Power Operation . . . "Economy" Fuels Are The Big Question Mark in the Campaign to Reduce Costs*, by H. C. Wilcox, pp. 85-87. *A REVIEW OF RAILWAY OPERATIONS IN 1956*, by J. Elmer Monroe, pp. 93-108. "The Outlook for 1957" p. 108. *Statistical Review of 1956*, pp. 109-122.

*Salute to the Iron Horse*, by E. F. Weekes. Twelve Fifteen, published by General Board of Education of the Methodist Church, Nashville 2, Tenn., October 1956, pp. 5-7.

*Santa Fe Magazine—Our Fiftieth Year of Continuous Publication. Vol. 50, No. 1, December 1956.* 128 p. Illus. John J. Knifke, editor. Railway Exchange Bldg., Chicago 4, Ill. "Fifty Years of Santa Fe Progress"—as well as a half century of uninterrupted company news reporting—is the theme of the cover for the Golden Anniversary issue. . . ."

*Ski Trains on Sky Hooks*, by Ted Dutton. Steelways, December 1956, pp. 8-9. Illus., part in color.

*A Story of Small Elderly Engines—Steam in Indian Summer* [no.] 7, by David P. Morgan. Trains, December 1956, pp. 26-30. Illus. by photographs by Philip R. Hastings. "Everything about a railroad cries 'BIG'! . . . And then . . . then there is the exception which proves the rule: the short line. . . ." Describes locomotives of the Dansville & Mount Morris; Buffalo & Susquehanna; and asks "Which of us is ready to step forward and say that, sight unseen, he can correctly judge a steam locomotive's size by the sound of its exhaust? Naturally I do not mean the exceptions." But recalls "A Chesapeake & Ohio Mike working out of Louisville"; "an AC-class articulated" in "an Espee engine terminal"; three-cylinder engines; Indiana Harbor Belt's 0-8-0's; L&N's 1999; a UP 9000; CNR's 4-8-4's; CPR's 4-6-2's; a gravel pit saddletanker, and a PRR II.

*Terminal del Valle de Mexico—Reportaje Gráfico.* Revista Ferrolas, Mexico 1, D.F., June 1956, pp. 31-112.

*Traffic Club of New York Bulletin—Fiftieth Anniversary Issue—Golden Anniversary 1906-1956.* 60 p. Illus. Published by The Club, Biltmore Hotel, New York 17, N. Y.

*The Watchmaker Who Built 1500 Locomotives.* Matthias Baldwin of Philadelphia. Watch Repair Digest, Bulova Watch Co., Inc., Bulova Park, Flushing 70, N.Y., Winter Issue, January, 1957, pp. 10-11.

*What Is The Railway Systems and Procedures Association?* by J. W. Milliken. New York Railroad Club Official Proceedings, October 18, 1956, pp. 166-168. "First, it's an organization of individuals, rather than corporations. Membership is restricted to railroaders, with a few exceptions. Employees of suppliers may not belong. Basically, RSPA is dedicated to helping each member become better equipped to handle his job. . . . We are not a rule-making body such as are the Mechanical and Accounting Divisions of AAR. We see our primary job as one of education, and I include in education research. . . ." (p. 166)

*Zig-Zags Ferroviaires en Italy*, by Jacques Hérissay. La Vie du Rail—Notre Métier, Paris, France. No. 575, "Noël 1956"—Spécial issue, pp. 19-29. Map and illustrations in color.



## Baltimore & Ohio Renumbering

The Baltimore & Ohio R. R. with its gradual addition of diesel electric locomotives and the diminishing numbers of steam locomotives, has regrouped and renumbered all of its motive power. This is the first general renumbering since 1884, something of a record along these lines tho' there has been renumberings of individual locomotives to make them conform to others of the same wheel arrangement upon rebuilding.

The steam locomotives will all be renumbered under 1000. The 4-6-2 type from 100-152; 2-8-0 type 200-227; 2-8-2 type 300-483; 2-10-2 type 500-538; 2-8-8-4 type 650-679; 4-8-2 type 700-757; and the 0-8-0 type 800-904. As of November of last year, 454 steam locomotives received these new numbers.

All diesel units will have four digit numbers and, it will be possible to distinguish the type of service for which the locomotive was built as well as the builder.

### *First Digit Figure*

1  
2  
3  
4  
5  
6  
7  
8  
9

### *Service*

Passenger Road "A" Unit  
Passenger Road "B" Unit  
Passenger Road Switcher  
Freight Road "A" Unit  
Freight Road "B" Unit  
Freight Road Switcher (Four Motors)  
Freight Road Switcher (Six Motors)  
Switcher (Under 900 H. P.)  
Switcher (900 H. P. and Over)

The second digit determines the Locomotive Builder

### *Second Digit Figures*

0 & 1  
2 & 3  
4, 5 & 6  
7  
8

### *Builder*

Alco Products, Inc.  
Baldwin-Lima-Hamilton Corp.  
Electro-Motive Div. (G. M. C.)  
Fairbanks, Morse & Co.  
General Electric Co.

Thus

### *Road Number*

1408  
2410  
3401  
4674  
5513  
6202  
7406  
8015  
9709

### *Service and Builder*

Passenger Road "A" Unit (E. M. D.)  
Passenger Road "B" Unit (E. M. D.)  
Passenger Road Switcher (E. M. D.)  
Freight Road "A" Unit (E. M. D.)  
Freight Road "B" Unit (E. M. D.)  
Freight Road Switcher (B-L-H)  
Freight Road Switcher (E. M. D.)  
Switcher (ALCo)  
Switcher (F. M.)

New classifications have been assigned to the Diesel Units so that the service of the unit and builder can be determined by the class. The last letter in the classification identifies the builder and the previous letters and figures identify the road service. In addition, the number (6) is used to identify road switchers with 6 traction motors.



<i>Class</i>	<i>Service</i>	<i>Builder</i>
PE	Passenger Road Unit	E. M. D.
PSE	Passenger Road Switcher	E. M. D.
FA	Freight Road Unit	ALCo.
FB	Freight Road Unit	B-L-H
FE	Freight Road Unit	E. M. D.
FSB	Freight Road Switcher	B-L-H
FSF	Freight Road Switcher	F. M.
FS6E	Freight Road Switcher (6 Motors)	E. M. D.
SA	Switcher	ALCo.
SB	Switcher	B-L-H
SE	Switcher	E. M. D.
SF	Switcher	F. M.
SG	Switcher	G. E.

The figure following the classification letters, such as PE1, PSE-2 and FA-3, etc. is used to group the diesel units by Horsepower or Model, and the numbers begin with the lowest horsepower unit of each group.

Suffix letter "X" behind figure for Road Units such as FB-1X, FE-3X, etc. signifies it is a "B" unit not equipped with cab.

Suffix letter "C" behind figure for Switching Locomotives such as SA-3C, SE-6C, etc., signifies unit is equipped for Multiple Unit Control.

Thus

<i>Class</i>	<i>Unit</i>	<i>Builder</i>
PE-3	Passenger Road "A" Unit	E. M. D.
FB-2X	Freight Road "B" Unit	B-L-H
FSF-2	Freight Road Switcher	F. M.
FS6E-4	Freight Road Switcher—6 Motors	E. M. D.
SA-3C	Switcher—M. U. control	ALCo.

Time will tell as to the workability of this system but the road should be congratulated for devising a system both in its road numbers and classification that will convey the type of service as well as the builder—something that never could be done with the steam engine so far as the road numbers were concerned. The road has also requested that the booklets containing this information were printed in a limited edition, intended for employees only and that there are no copies available for the "fans" who may write in for them. If there is enough interest on the part of our members, this material could be reproduced in our publication but, don't expect the "other fellow" to write your letter for you.

## New Books

**THE AMERICAN RAILROAD NETWORK, 1861-1890**, by George Rogers Taylor and Miss Irene D. Neu. 113 pages, 9 $\frac{1}{4}$  x 6. Published by Harvard University Press, Cambridge, Mass. Price \$3.75.

The authors of this book have presented an important but often neglected aspect of American transportation history of the physical integration of our railroad network in the latter half of the nineteenth century.

The first portion of the book is devoted to a study of the railroad network in the United States and Canada as it existed on April 1, 1861. As the authors have pointed out, a study of any of the railroad maps prior to that time simply show the extent of the individual railroad lines. What their track gauge was, whether they connected with another railroad serving the same city was unknown, so far as the average map was concerned and the only place this information could be obtained was in the early railroad guides. Prior to the Civil War, our railroads were almost local in character and the traveler that used more than one railroad in his journey had his difficulties. In the cities, the cabmen and draymen thrived on a lucrative business. The large scale maps in color, show for the first time an accurate picture of the extent and location of our American railroads on the eve of the Civil War, together with their individual gauge. This diversity of gauges and lack of connections between the various lines hampered the war effort on both sides. The railroads of the North could replenish their rolling stock as it was needed but those in the South, where there was little or no manufacturing of this type, were unable to do so. They deserve plenty of credit for doing as well as they did.

The second part of the book describes the growth of the freight car lines that permitted the movement of goods without change of car and other methods that permitted the free interchange of rolling stock that came subsequent to the war. Such devices as "compromise" wheels, "elevating machines" to permit the change of trucks are mentioned and discussed. All served their purpose at the time and all disappeared with the adoption of a uniform gauge.

By 1890 the integration of our railroads systems was pretty well completed but during the years prior to this formation existed a condition known to the railroad historian only in a general way. This book has been the means of enriching and adding to these meagre details and it is a study in which both authors should take pride in their efforts.

**SHORT LINE JUNCTION**, by Jack R. Wagner. 266 pages, 8 x 5 $\frac{3}{8}$ , illustrated. Published by Academy Library Guild, Fresno, California. Price \$4.75.

In a very interesting fashion, the author has recounted the stories of the California Western; Yreka Western; McCloud River; Quincy; Sierra; Nevada Northern and Nevada Copper Belt Railroads. These short

lines were all constructed for some specific purpose and, when that "played out", then came "old man trouble." One thing that appeals to this reviewer is that the author has placed at the close of the volume a section devoted to the information and history pertaining to each of these lines as well as tables listing their locomotives. This is a great convenience for the research worker. The author has told his stories in an interesting and straightforward manner; it is an enjoyable work—one that should be of especial interest to our members on the Pacific Coast.

**CHESSIE'S ROAD**, by Charles W. Turner. 286 pages, 9 x 6, illustrated. Published by Garrett & Massie, Inc., 1406 East Franklin St., Richmond (15), Virginia. Price \$4.90.

The Chesapeake & Ohio Ry. had its beginnings with the Louisa R. R., chartered in 1836 to build a twenty-two mile railroad from Doswell to Frederick Hall, Virginia, completed in December, 1837. The road was extended to Charlottesville and Staunton and assumed the name of Virginia Central R. R. in 1850 and the tunnelling of the Blue Ridge Mountains, under the direction of Col. Claudius Crozet, was a major undertaking for that day.

The war between the states left the railroad almost in ruins both in the matter of road bed and rolling stock but, with \$100.00 in gold, President Edmond Fontaine and the others started afresh. Under Collis P. Huntington, of Central Pacific R. R. fame, the road was extended into West Virginia and Kentucky as well as to Newport News. From 1888-1900 the road was under the direction of Melville E. Ingalls and from 1900-1909 it was dominated by the Pennsylvania and New York Central roads in order to secure harmony among the eastern trunk lines. At the close of World War I it came under the control of the Van Sweringen brothers and until recently it has been under the control of Robert R. Young. Coal has ever been the dominant product handled by the road but the fine condition would not have been possible had the road not been managed wisely and earnings ploughed back into the property. For a ride of sheer beauty, take the east bound "F. F. V." some spring evening from Washington, get up shortly after the train has left Clifton Forge and the ride through the New River valley with the dogwood, azalea and spring shrubs in blossom cannot be equalled anywhere in the east.

The book is a mine of information and it must represent hours of tedious research. Unfortunately the author pays scant attention to sequence and the reader is tossed from net earnings and number of cars of coal handled to boiler pressure and diameter of drivers of locomotives. Collis P. Huntington is introduced simply as a capitalist interested in a coast-to-coast railroad instead of one of the four partners that built the western end of our first transcontinental railroad and the Van Sweringen brothers are eased in simply as "financial interests."

The writer is evidently not mechanically minded. Too much attention has been given to boiler pressure and diameter of drivers of locomotives—why these factors should be considered without others, if considered at all, this reviewer does not know. The sequence of their delivery

is not always followed and the C & O, the first road to use the Mountain type locomotive, is not even mentioned. Furthermore, the C & O, always a staunch supporter of the steam locomotive was not "gradually converted to diesel-power"—rather it came almost overnight. From the book, this reviewer gathers that the slogan "The Battlefield Line" applied to the 1860's and was not a World War II innovation and lastly the author's use of "N. P. R." for the abbreviation of the "Nickle Plate" instead of the standard "NKP" will hardly improve the credulity or the temper of the reader. The illustrations are well reproduced but most of them are familiar but some of the maps should have been redrawn to make them stand out clearer.

To this reviewer, the C & O has always been an interesting road, not only because of his own familiarity with it during the past thirty years but because of its historic interest as well. In making out his outline, the author has wisely followed the different eras experienced by the road and confined a chapter to each era. In the later chapters, the reader is shuttled back and forth from one event to another and from one subject to another instead of being handled in a straight-forward manner. One chapter, in the hands of an expert, could have covered the motive power situation, thus relieving the individual chapters of this material, and it would have been far better and probably more accurate. The author, a native of Frederick Hall, Virginia, an early terminus of the Louisa R. R., has finally achieved his ambition to write a history of the C & O Ry. and he has created one that will be of great reference value but many portions lack clearness and are difficult to follow and these have hurt the efforts of the author.

**REDWOOD RAILWAYS**, by Gilbert H. Kneiss. 165 pages, 9 x 6, illustrated. Published by Howell-North Press, 2801 Shattuck Ave., Berkeley (5), Cal. Price \$4.75.

The author of this interesting volume needs no introduction to our membership. As the author of "Bonanza Railroads", a book which is now in its eighth edition, his latest publication is fully as interesting and carefully prepared.

The story concerns the "trials and tribulations" of the San Francisco & North Pacific and the Northwestern Pacific R. Rs., that had their origins in the short roads of Marin and Sonoma Counties of California under the direction or control of Asbury Harpending, Milton Latham and Peter Donohue.

In a direct and simple manner, the author has related the history of these little lines and, to this reviewer, it has been the means of clearing up in his mind, the exact location of these roads. It can be truthfully stated, the book is a story of "Redwoods, Pienies and Commuters."

The book is richly illustrated with beautiful reproductions of old time photographs but, better than that is a map facing the first page of each chapter that shows the road and the section served in that particular chapter. This orientation of the lines with each chapter adds greatly to the value of the work. Two fine maps are to be found in the pocket at the

rear of the volume and locomotive rosters of each of the individual lines have been carefully prepared and appear in the Appendices.

With such careful preparation and the ease with which the author writes, the average "rail fan" cannot fail to be interested in this book. But better yet, it will also serve as a reference book for these little lines. In the opinion of this reviewer, the author has set a precedent that others might well follow.

## **In Memory Of**

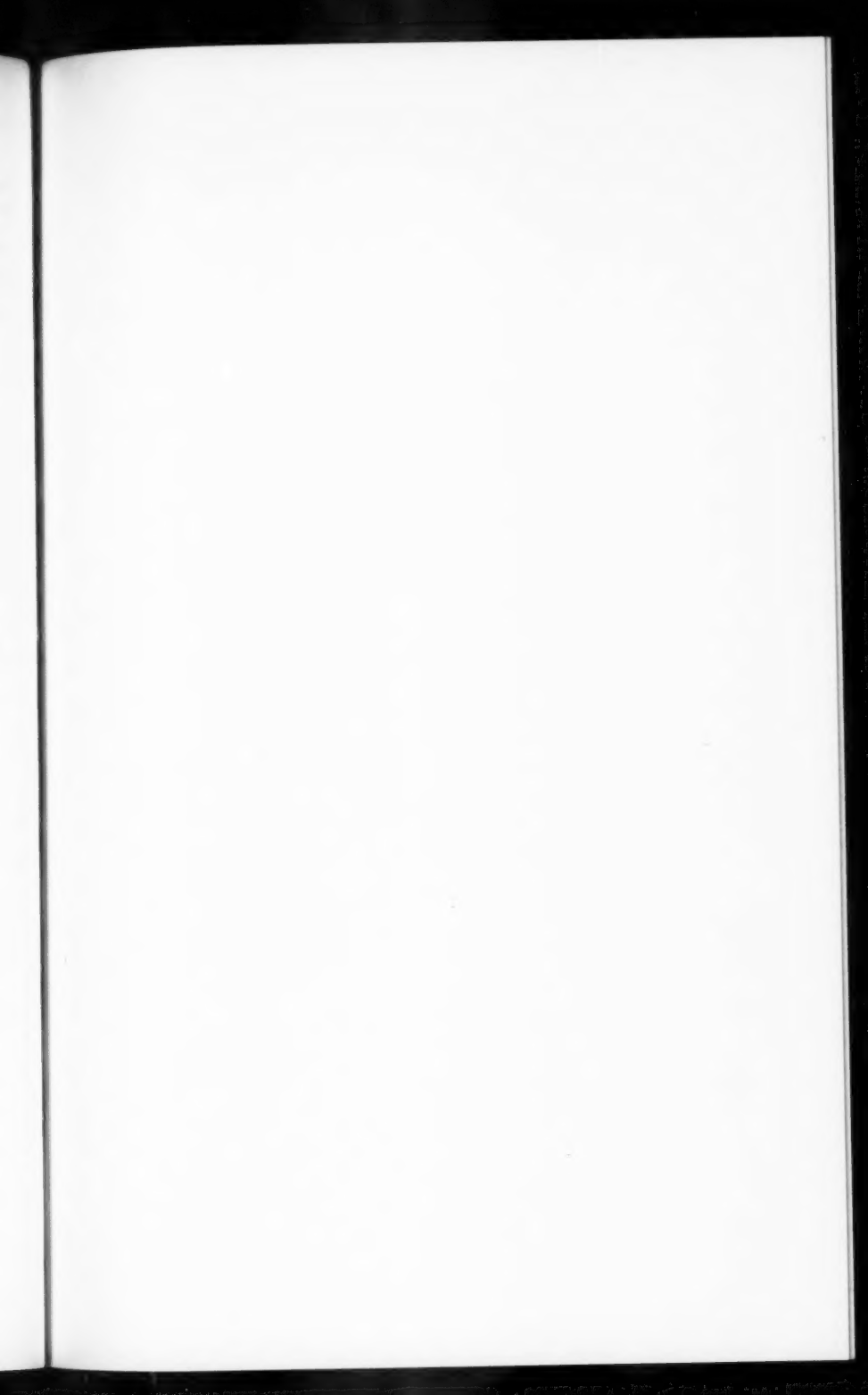
**RAYMOND FULLERTON**  
Annual Member  
1033 Temple Ave., Long Beach, California  
Who Died on Dec. 30, 1956

**DR. RUSSELL C. LETSON**  
Annual Member  
10525 Mason Ave., Chatsworth, California  
Who Died on Jan. 2, 1957

**HARRY S. MOY**  
Annual Member  
3 Maple Place, Jamaica Plain, Massachusetts  
Who Died on Jan. 27, 1957

**EDWARD B. TREICHEL**  
Annual Member  
1724 School St., Chicago, Illinois  
Who Died on July 31, 1956

**HARRY S. VINCENT**  
Annual Member  
Chatham, Massachusetts  
Who Died on Jan. 18, 1956



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